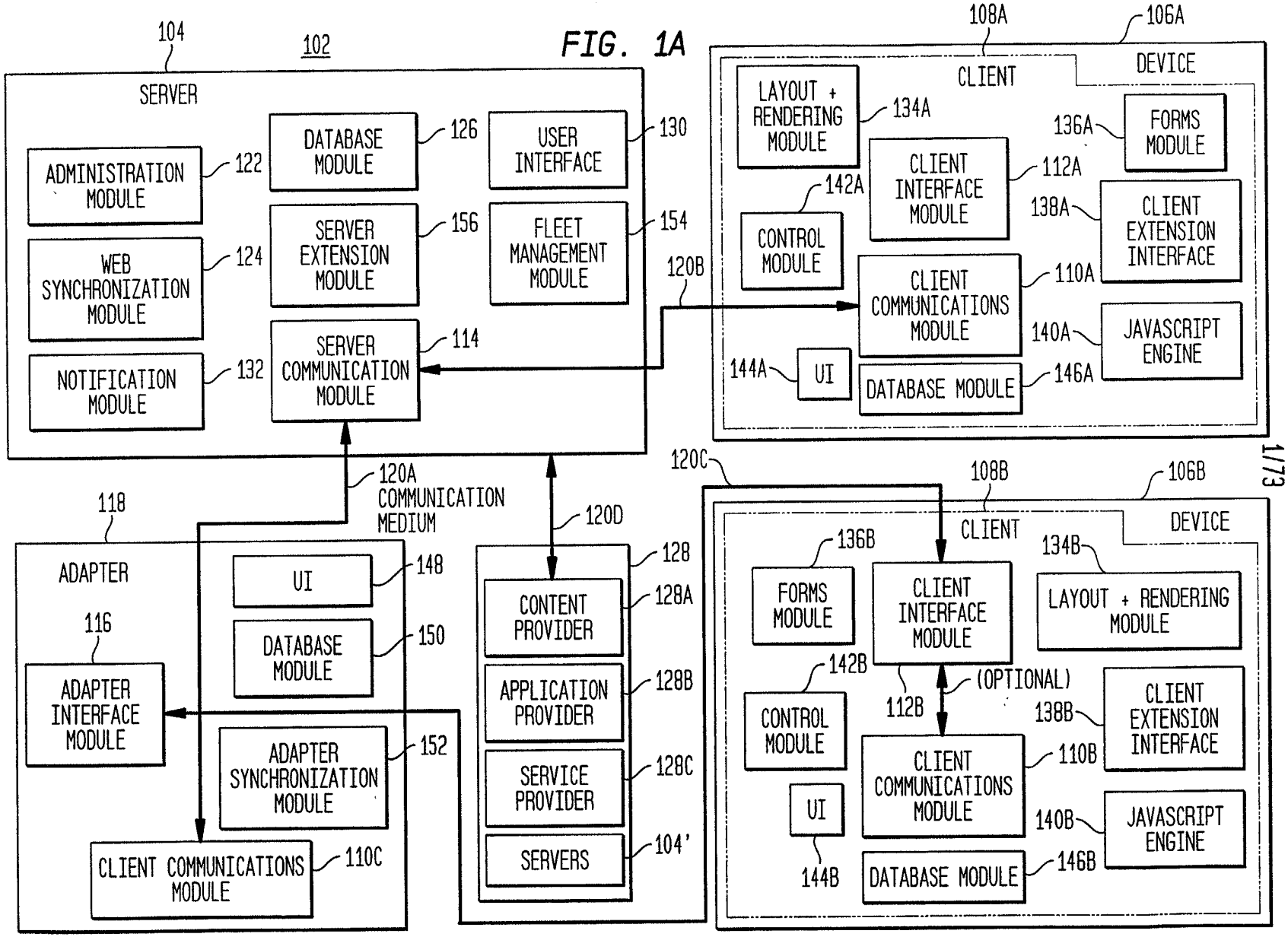
TOSOT 20020060

FIG. 1A



1/73

TOSHIBA 2052860

FIG. 1B

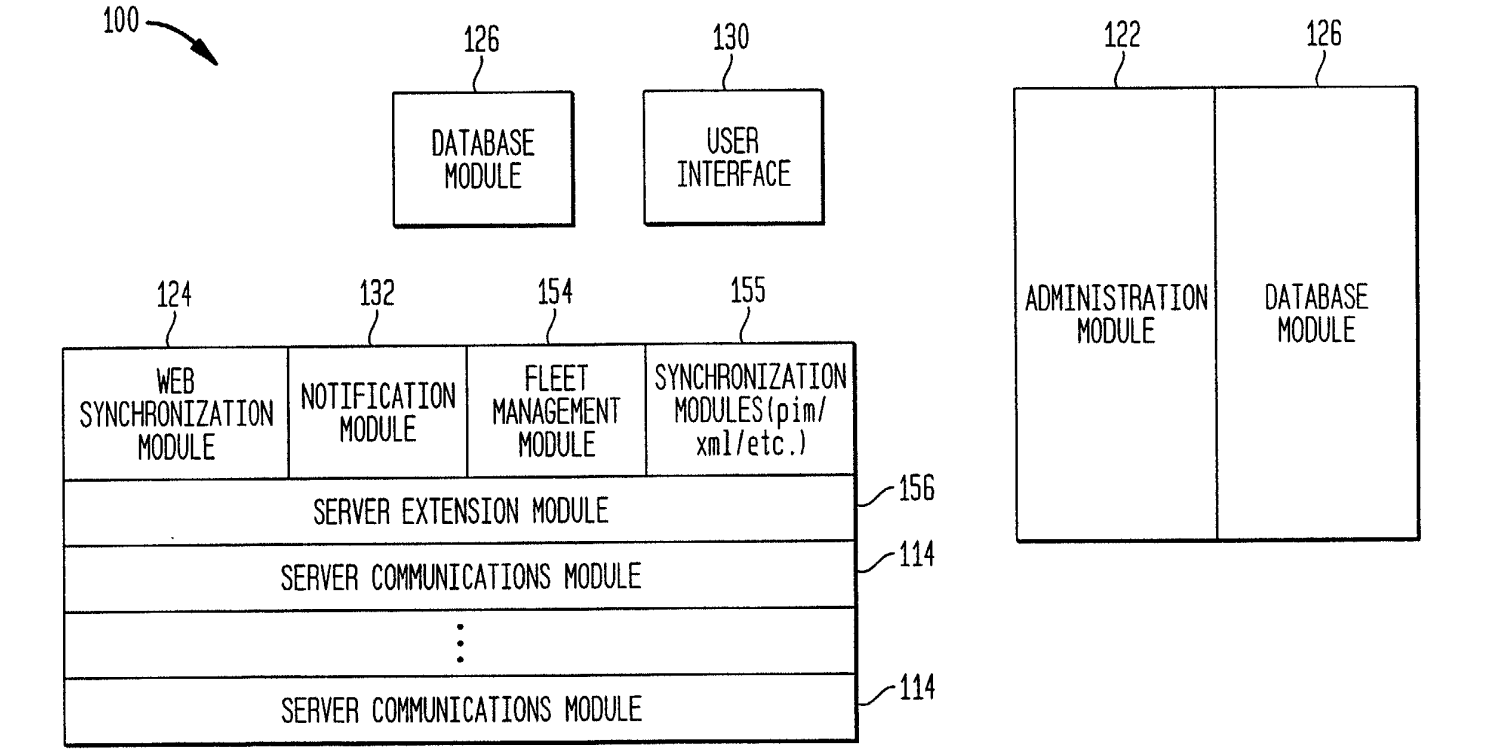


FIG. 1B1

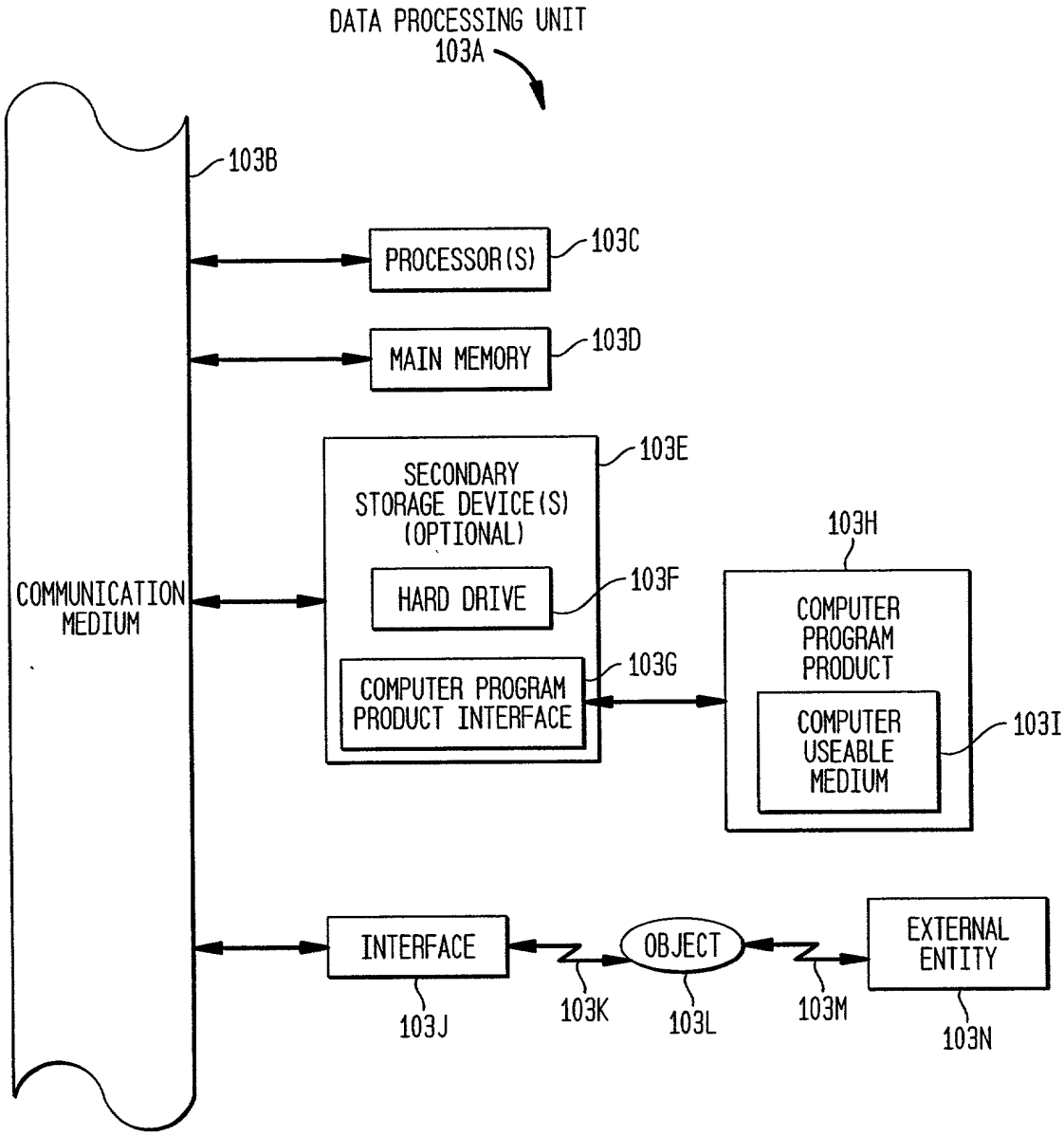

DATA PROCESSING UNIT
103A
103B
PROCESSOR(S)
103C
MAIN MEMORY
103D
SECONDARY STORAGE DEVICE(S) (OPTIONAL)
103E
HARD DRIVE
103F
COMPUTER PROGRAM PRODUCT INTERFACE
103G
COMMUNICATION MEDIUM
103H
COMPUTER PROGRAM PRODUCT
COMPUTER USEABLE MEDIUM
103I
INTERFACE
103J
OBJECT
103K
103L
EXTERNAL ENTITY
103M
103N

FIG. 1C

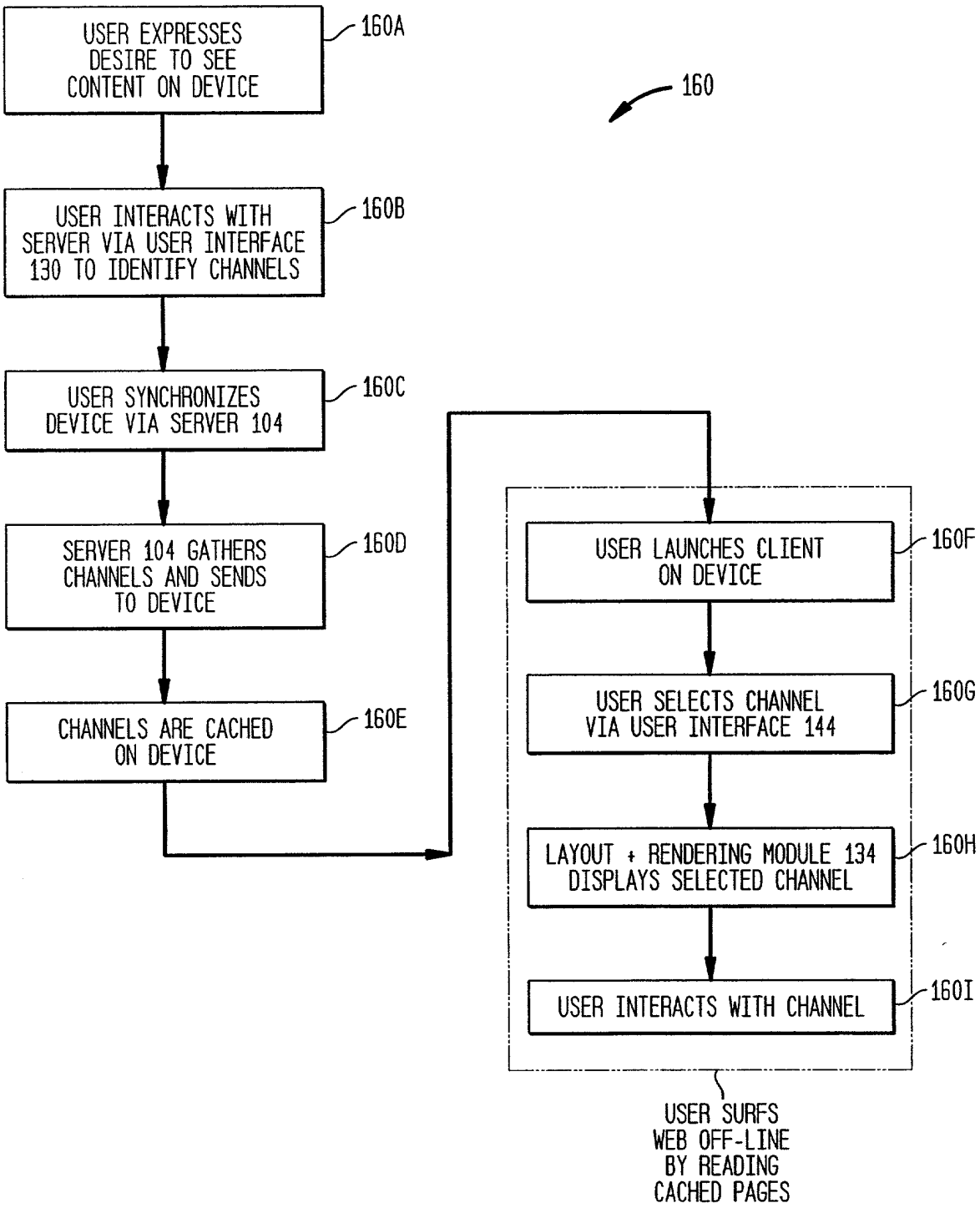

USER EXPRESSES DESIRE TO SEE CONTENT ON DEVICE
160A
160
USER INTERACTS WITH SERVER VIA USER INTERFACE 130 TO IDENTIFY CHANNELS
160B
USER SYNCHRONIZES DEVICE VIA SERVER 104
160C
SERVER 104 GATHERS CHANNELS AND SENDS TO DEVICE
160D
CHANNELS ARE CACHED ON DEVICE
160E
USER LAUNCHES CLIENT ON DEVICE
160F
USER SELECTS CHANNEL VIA USER INTERFACE 144
160G
LAYOUT + RENDERING MODULE 134 DISPLAYS SELECTED CHANNEL
160H
USER INTERACTS WITH CHANNEL
160I
USER SURFS WEB OFF-LINE BY READING CACHED PAGES

FIG. 1D

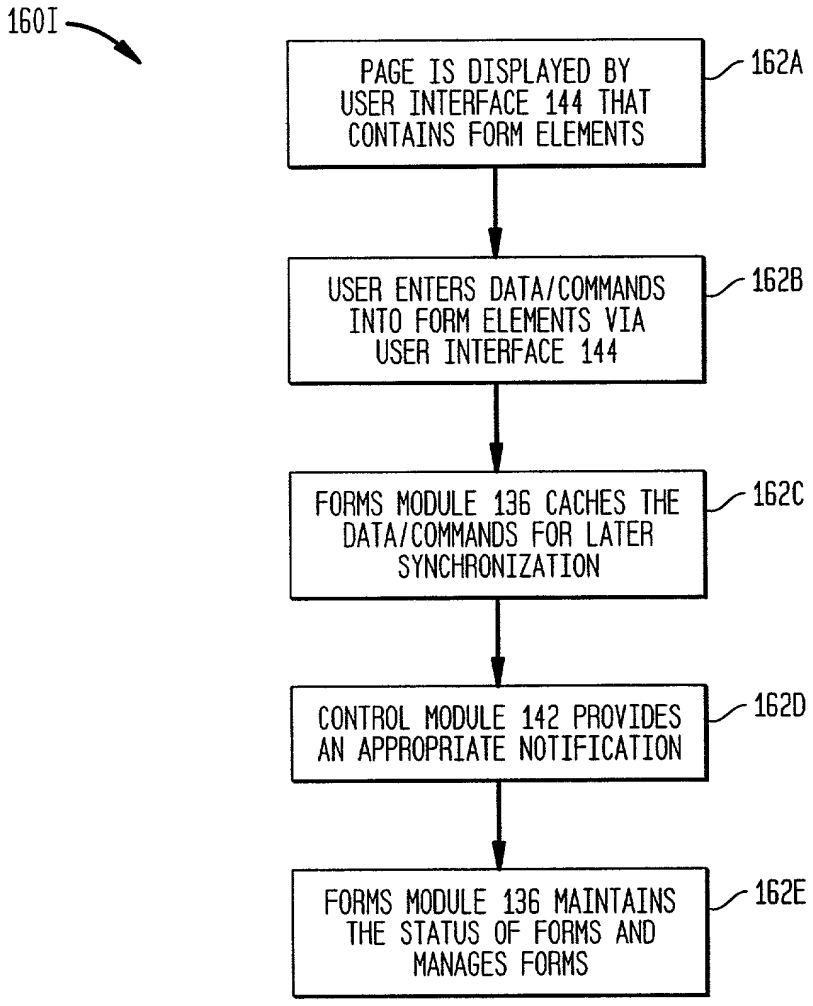

160I
PAGE IS DISPLAYED BY USER INTERFACE 144 THAT CONTAINS FORM ELEMENTS
162A
USER ENTERS DATA/COMMANDS INTO FORM ELEMENTS VIA USER INTERFACE 144
162B
FORMS MODULE 136 CACHES THE DATA/COMMANDS FOR LATER SYNCHRONIZATION
162C
CONTROL MODULE 142 PROVIDES AN APPROPRIATE NOTIFICATION
162D
FORMS MODULE 136 MAINTAINS THE STATUS OF FORMS AND MANAGES FORMS
162E

FIG. 1E

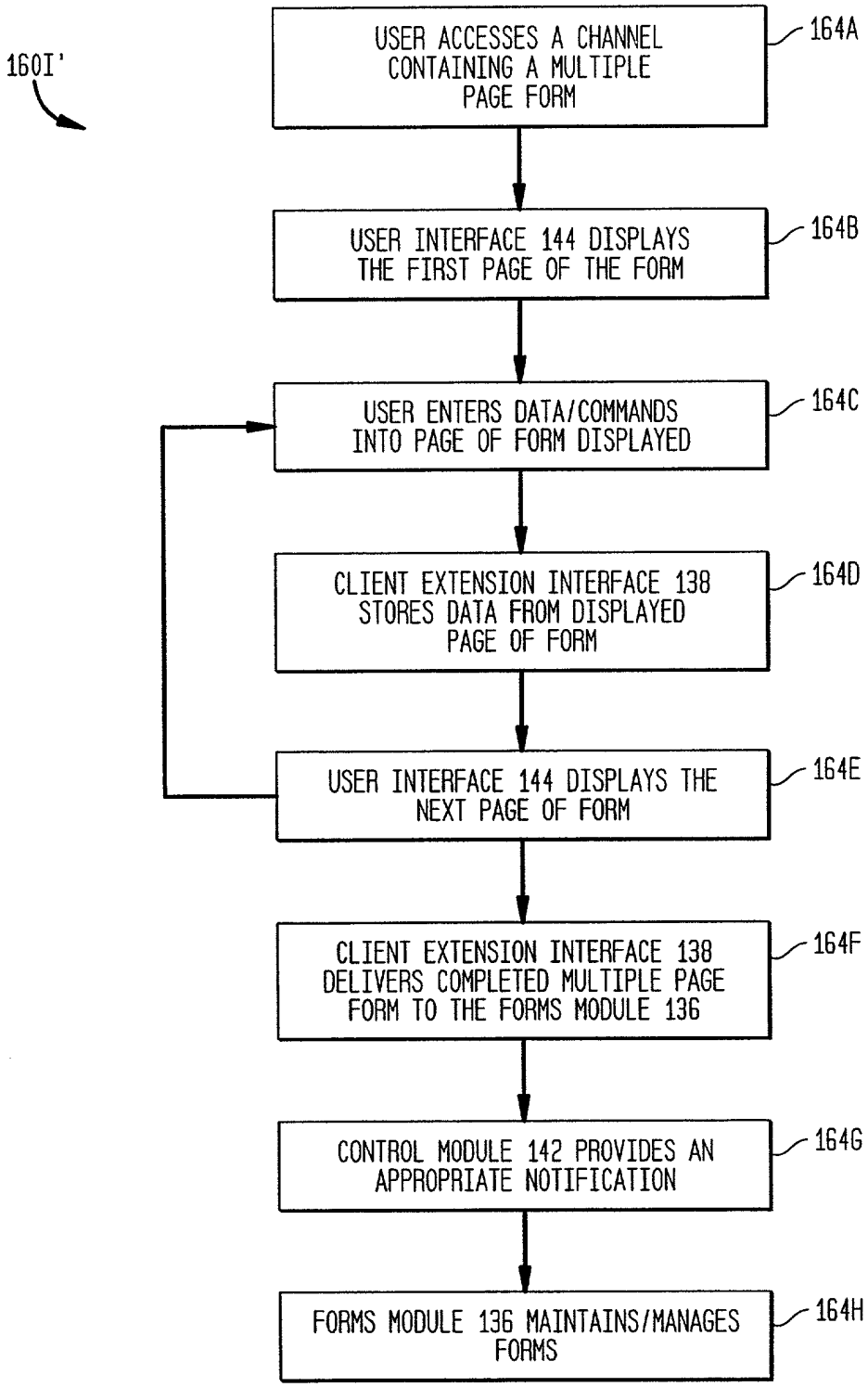

160I'
USER ACCESSES A CHANNEL CONTAINING A MULTIPLE PAGE FORM
164A
USER INTERFACE 144 DISPLAYS THE FIRST PAGE OF THE FORM
164B
USER ENTERS DATA/COMMANDS INTO PAGE OF FORM DISPLAYED
164C
CLIENT EXTENSION INTERFACE 138 STORES DATA FROM DISPLAYED PAGE OF FORM
164D
USER INTERFACE 144 DISPLAYS THE NEXT PAGE OF FORM
164E
CLIENT EXTENSION INTERFACE 138 DELIVERS COMPLETED MULTIPLE PAGE FORM TO THE FORMS MODULE 136
164F
CONTROL MODULE 142 PROVIDES AN APPROPRIATE NOTIFICATION
164G
FORMS MODULE 136 MAINTAINS/MANAGES FORMS
164H

FIG. 1F1

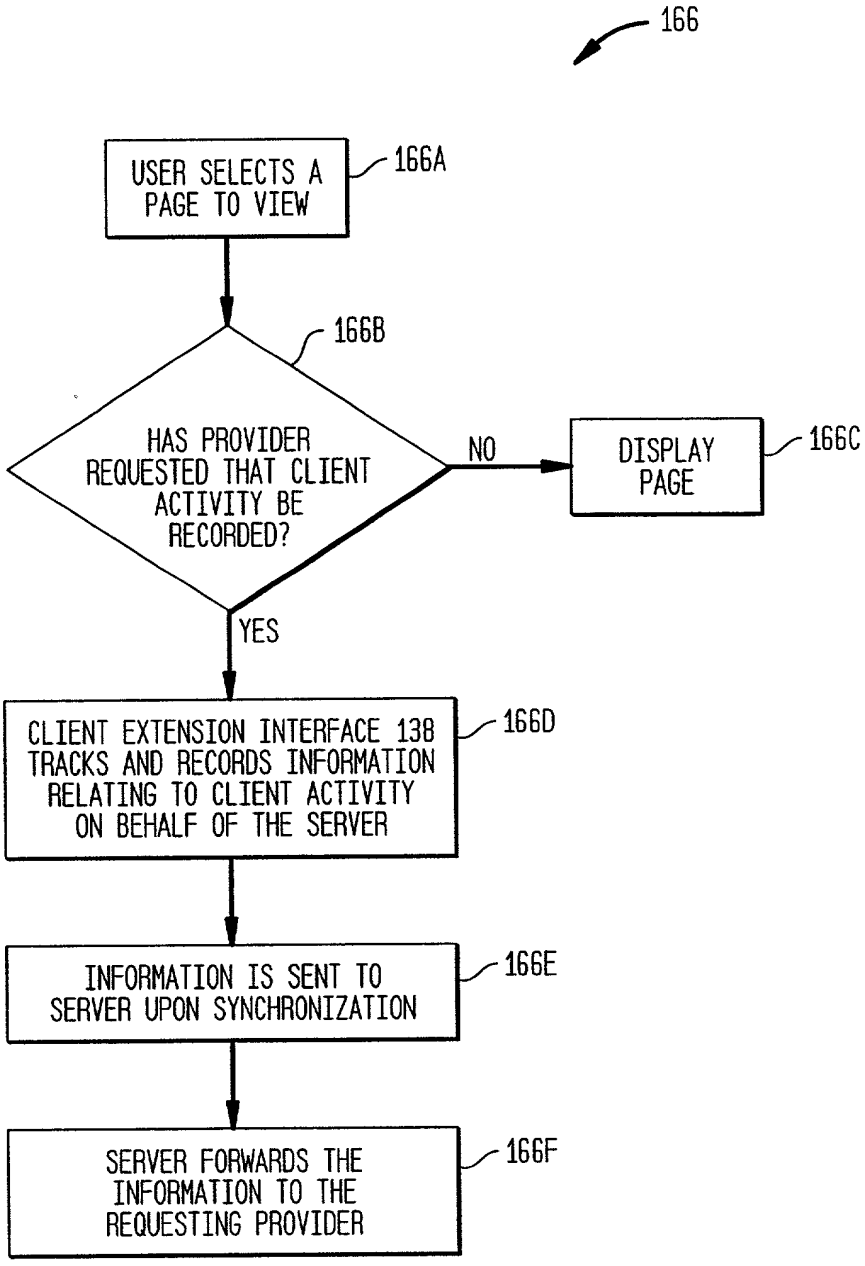

166
USER SELECTS A PAGE TO VIEW
166A
166B
HAS PROVIDER REQUESTED THAT CLIENT ACTIVITY BE RECORDED?
NO
DISPLAY PAGE
166C
YES
CLIENT EXTENSION INTERFACE 138 TRACKS AND RECORDS INFORMATION RELATING TO CLIENT ACTIVITY ON BEHALF OF THE SERVER
166D
INFORMATION IS SENT TO SERVER UPON SYNCHRONIZATION
166E
SERVER FORWARDS THE INFORMATION TO THE REQUESTING PROVIDER
166F

FIG. 1F2

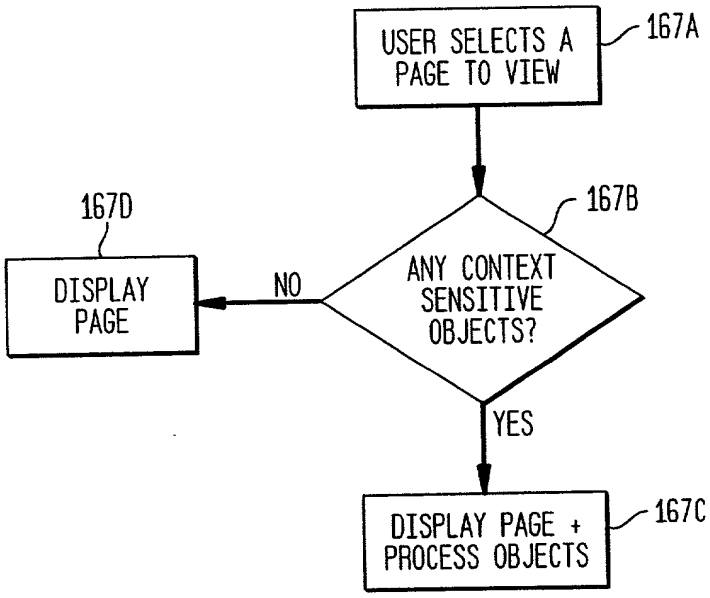


FIG. 1G

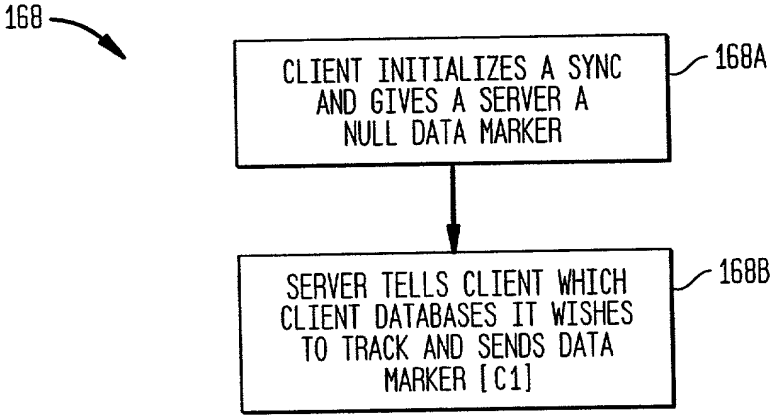


FIG. 1H1

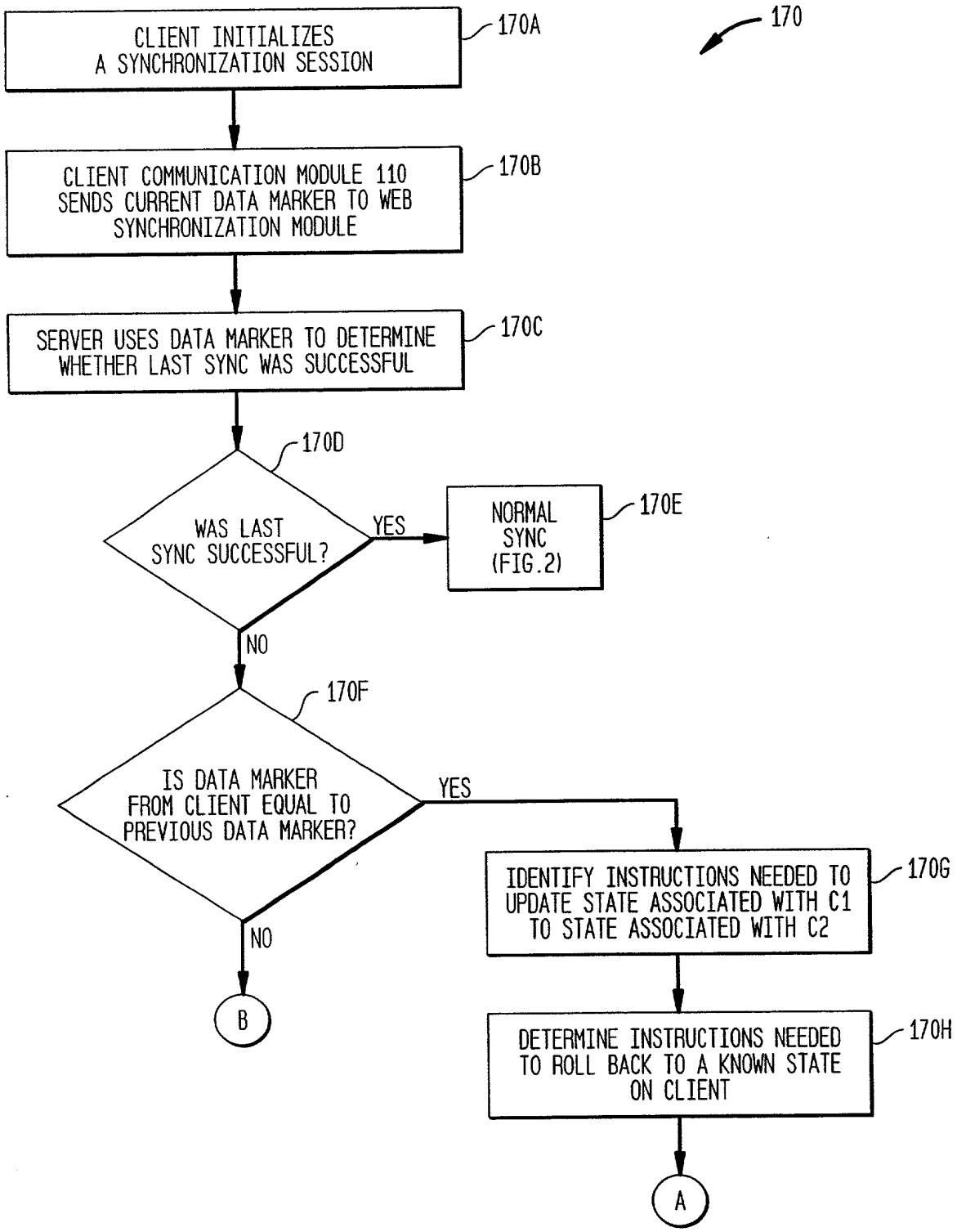

170
CLIENT INITIALIZES A SYNCHRONIZATION SESSION
170A
CLIENT COMMUNICATION MODULE 110 SENDS CURRENT DATA MARKER TO WEB SYNCHRONIZATION MODULE
170B
SERVER USES DATA MARKER TO DETERMINE WHETHER LAST SYNC WAS SUCCESSFUL
170C
170D
WAS LAST SYNC SUCCESSFUL?
YES
NORMAL SYNC (FIG.2)
170E
NO
170F
IS DATA MARKER FROM CLIENT EQUAL TO PREVIOUS DATA MARKER?
YES
NO
IDENTIFY INSTRUCTIONS NEEDED TO UPDATE STATE ASSOCIATED WITH C1 TO STATE ASSOCIATED WITH C2
170G
DETERMINE INSTRUCTIONS NEEDED TO ROLL BACK TO A KNOWN STATE ON CLIENT
170H
B
A

FIG. 1H2

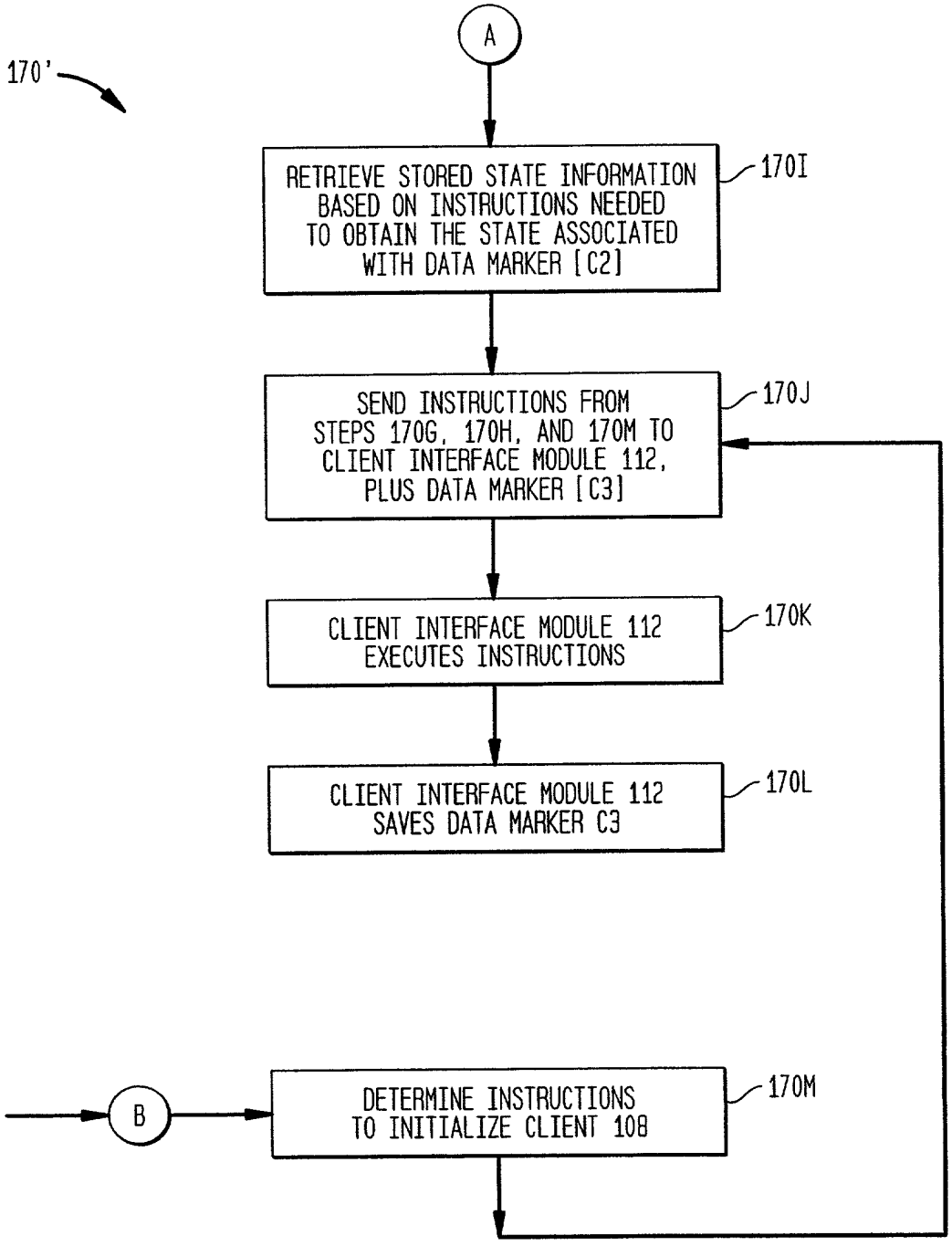

170'
A
RETRIEVE STORED STATE INFORMATION BASED ON INSTRUCTIONS NEEDED TO OBTAIN THE STATE ASSOCIATED WITH DATA MARKER [C2]
170I
SEND INSTRUCTIONS FROM STEPS 170G, 170H, AND 170M TO CLIENT INTERFACE MODULE 112, PLUS DATA MARKER [C3]
170J
CLIENT INTERFACE MODULE 112 EXECUTES INSTRUCTIONS
170K
CLIENT INTERFACE MODULE 112 SAVES DATA MARKER C3
170L
B
DETERMINE INSTRUCTIONS TO INITIALIZE CLIENT 108
170M

FIG. 1I1

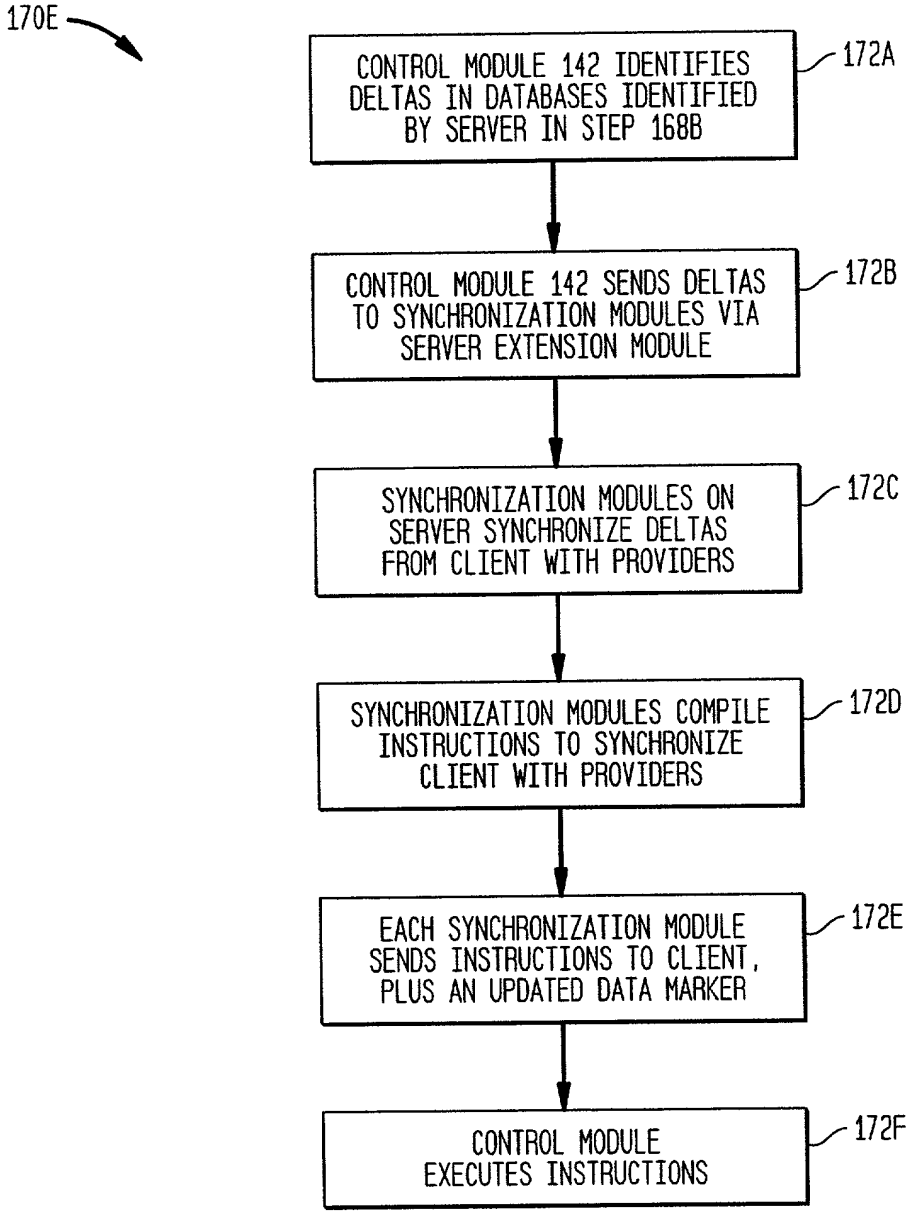

170E
CONTROL MODULE 142 IDENTIFIES DELTAS IN DATABASES IDENTIFIED BY SERVER IN STEP 168B
172A
CONTROL MODULE 142 SENDS DELTAS TO SYNCHRONIZATION MODULES VIA SERVER EXTENSION MODULE
172B
SYNCHRONIZATION MODULES ON SERVER SYNCHRONIZE DELTAS FROM CLIENT WITH PROVIDERS
172C
SYNCHRONIZATION MODULES COMPILE INSTRUCTIONS TO SYNCHRONIZE CLIENT WITH PROVIDERS
172D
EACH SYNCHRONIZATION MODULE SENDS INSTRUCTIONS TO CLIENT, PLUS AN UPDATED DATA MARKER
172E
CONTROL MODULE EXECUTES INSTRUCTIONS
172F

FIG. 1I2

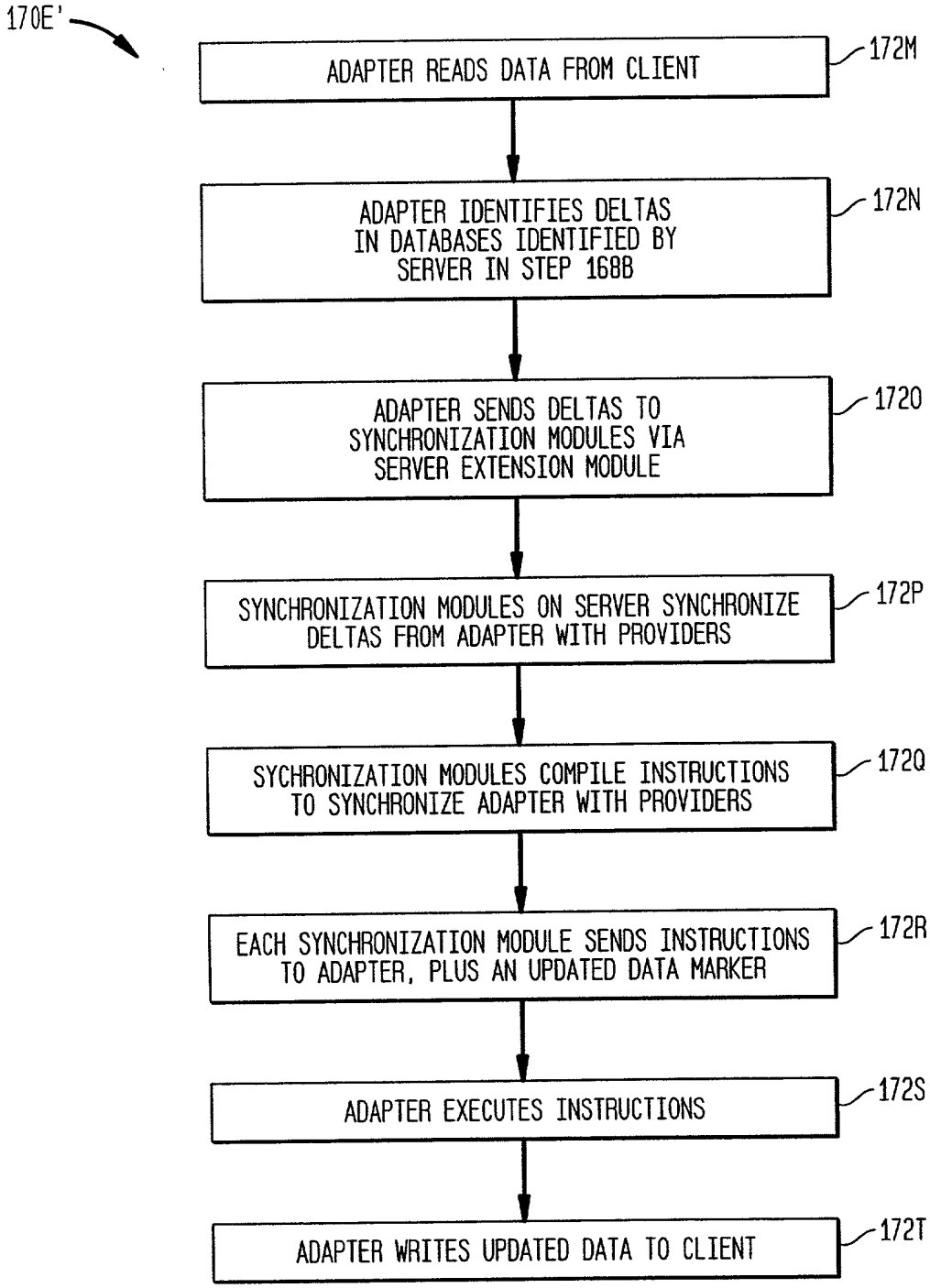

170E'
ADAPTER READS DATA FROM CLIENT
172M
ADAPTER IDENTIFIES DELTAS IN DATABASES IDENTIFIED BY SERVER IN STEP 168B
172N
ADAPTER SENDS DELTAS TO SYNCHRONIZATION MODULES VIA SERVER EXTENSION MODULE
172O
SYNCHRONIZATION MODULES ON SERVER SYNCHRONIZE DELTAS FROM ADAPTER WITH PROVIDERS
172P
SYCHRONIZATION MODULES COMPILE INSTRUCTIONS TO SYNCHRONIZE ADAPTER WITH PROVIDERS
172Q
EACH SYNCHRONIZATION MODULE SENDS INSTRUCTIONS TO ADAPTER, PLUS AN UPDATED DATA MARKER
172R
ADAPTER EXECUTES INSTRUCTIONS
172S
ADAPTER WRITES UPDATED DATA TO CLIENT
172T

FIG. 1J

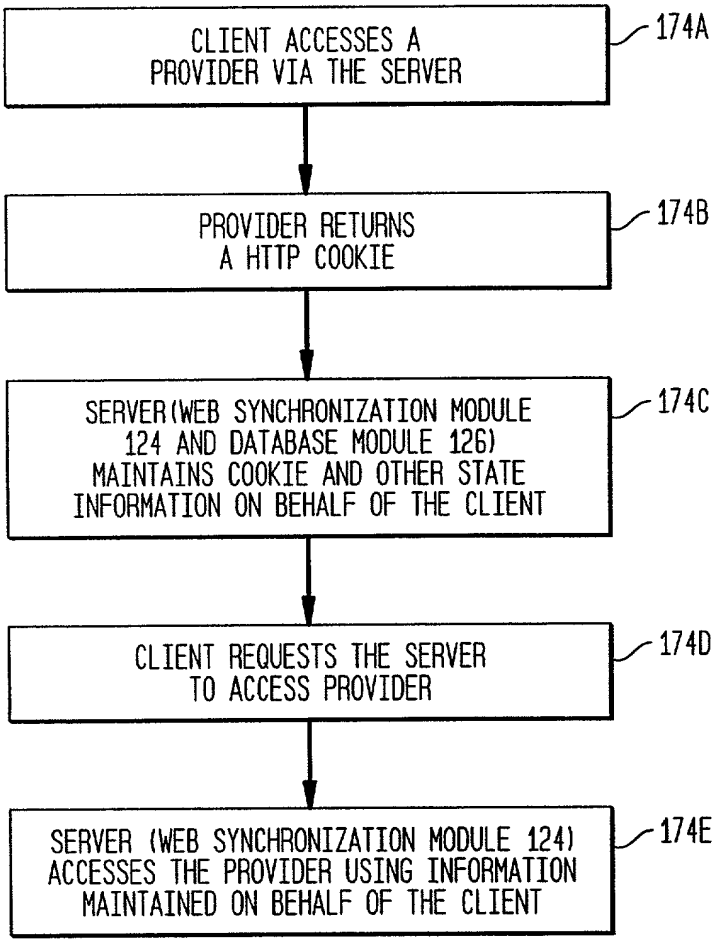

CLIENT ACCESSES A PROVIDER VIA THE SERVER
174A
PROVIDER RETURNS A HTTP COOKIE
174B
SERVER(WEB SYNCHRONIZATION MODULE 124 AND DATABASE MODULE 126) MAINTAINS COOKIE AND OTHER STATE INFORMATION ON BEHALF OF THE CLIENT
174C
CLIENT REQUESTS THE SERVER TO ACCESS PROVIDER
174D
SERVER (WEB SYNCHRONIZATION MODULE 124) ACCESSES THE PROVIDER USING INFORMATION MAINTAINED ON BEHALF OF THE CLIENT
174E

FIG. 1K

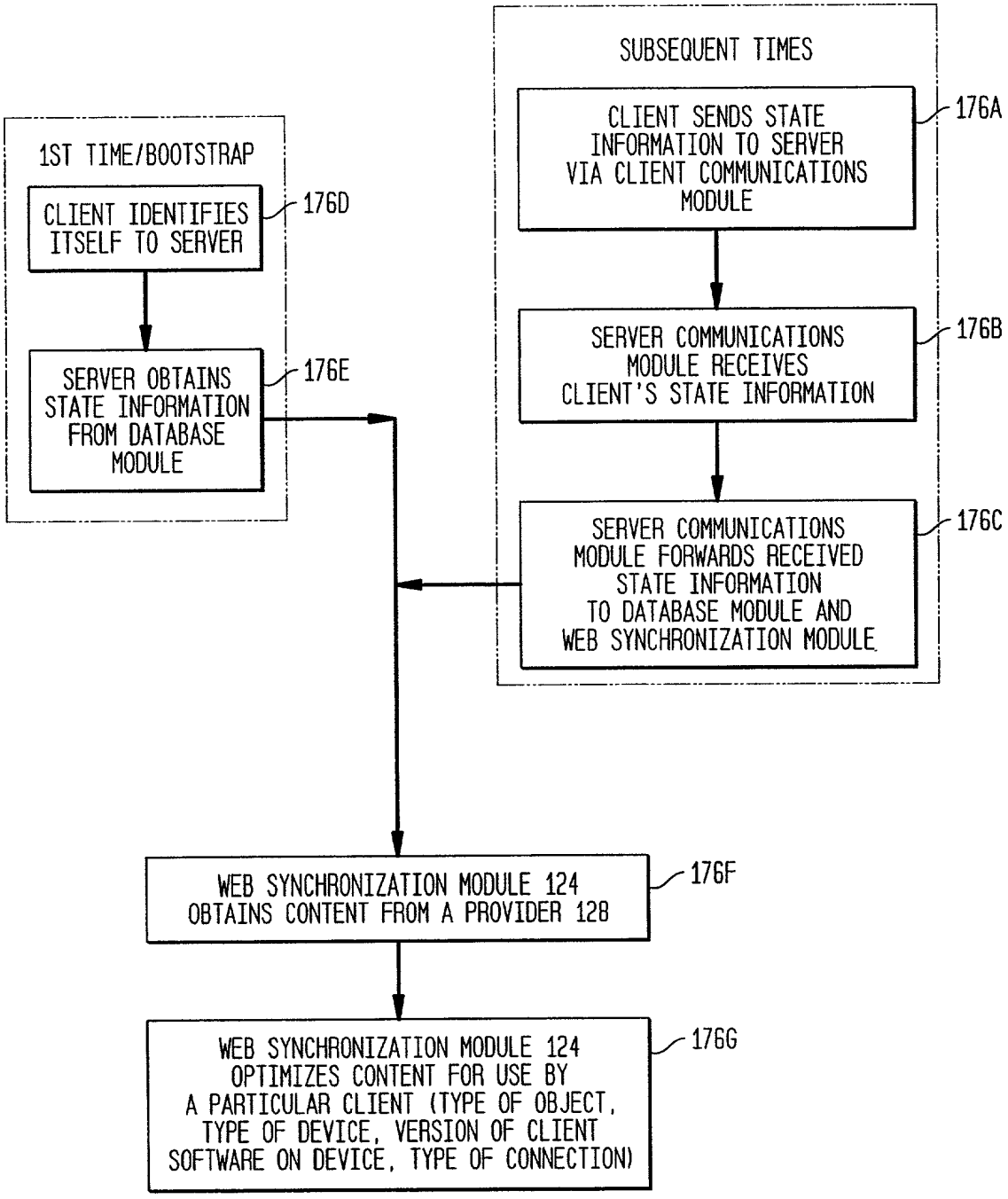

SUBSEQUENT TIMES
CLIENT SENDS STATE INFORMATION TO SERVER VIA CLIENT COMMUNICATIONS MODULE
176A
SERVER COMMUNICATIONS MODULE RECEIVES CLIENT'S STATE INFORMATION
176B
SERVER COMMUNICATIONS MODULE FORWARDS RECEIVED STATE INFORMATION TO DATABASE MODULE AND WEB SYNCHRONIZATION MODULE
176C
1ST TIME/BOOTSTRAP
CLIENT IDENTIFIES ITSELF TO SERVER
176D
SERVER OBTAINS STATE INFORMATION FROM DATABASE MODULE
176E
WEB SYNCHRONIZATION MODULE 124 OBTAINS CONTENT FROM A PROVIDER 128
176F
WEB SYNCHRONIZATION MODULE 124 OPTIMIZES CONTENT FOR USE BY A PARTICULAR CLIENT (TYPE OF OBJECT, TYPE OF DEVICE, VERSION OF CLIENT SOFTWARE ON DEVICE, TYPE OF CONNECTION)
176G

FIG. 1L

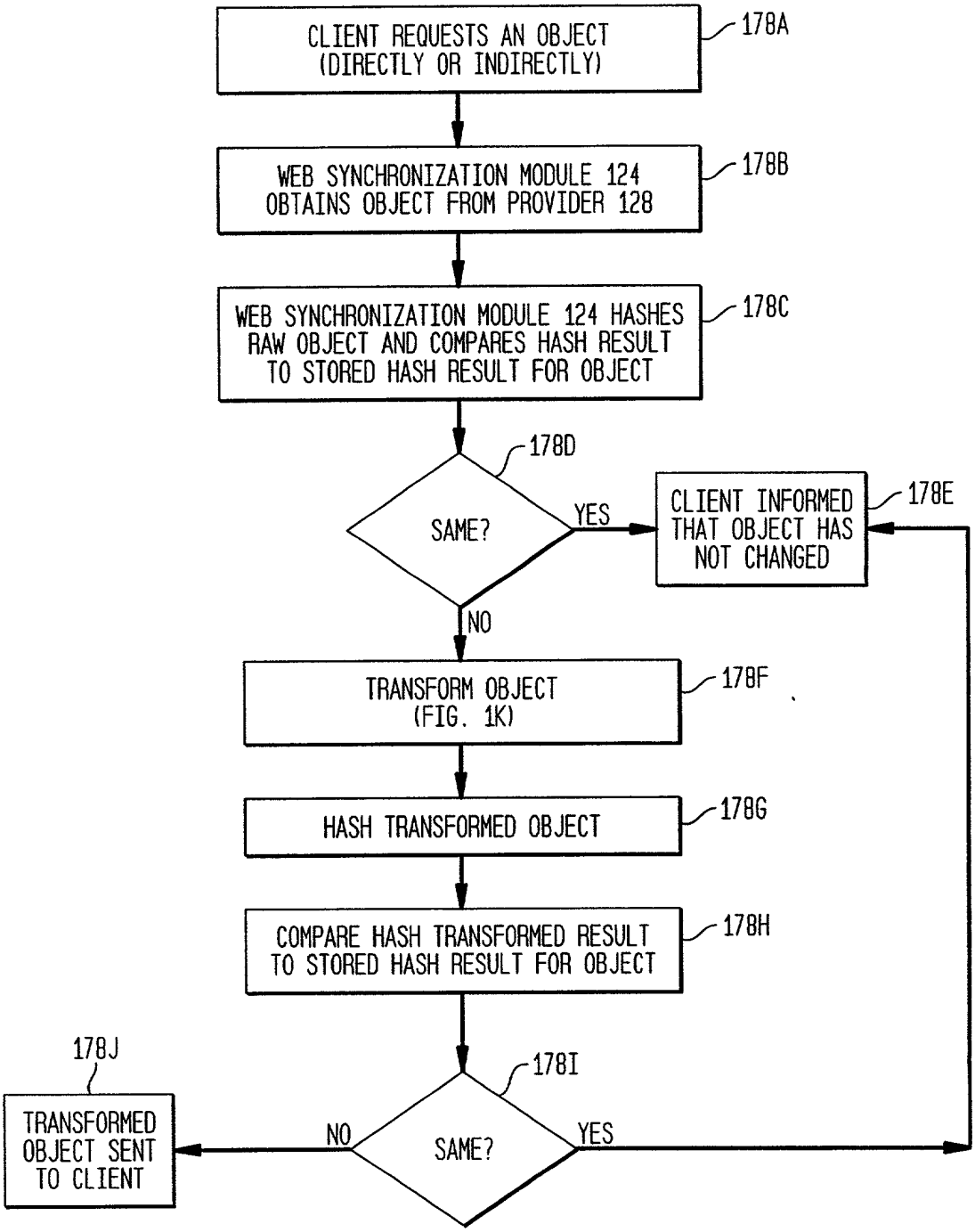
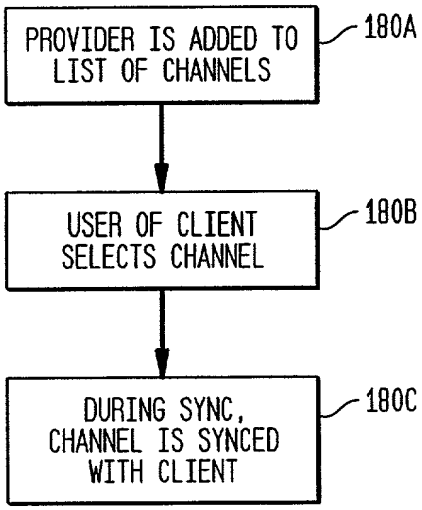

CLIENT REQUESTS AN OBJECT (DIRECTLY OR INDIRECTLY)
178A
WEB SYNCHRONIZATION MODULE 124 OBTAINS OBJECT FROM PROVIDER 128
178B
WEB SYNCHRONIZATION MODULE 124 HASHES RAW OBJECT AND COMPARES HASH RESULT TO STORED HASH RESULT FOR OBJECT
178C
178D
SAME?
YES
CLIENT INFORMED THAT OBJECT HAS NOT CHANGED
178E
NO
TRANSFORM OBJECT (FIG. 1K)
178F
HASH TRANSFORMED OBJECT
178G
COMPARE HASH TRANSFORMED RESULT TO STORED HASH RESULT FOR OBJECT
178H
178J
178I
TRANSFORMED OBJECT SENT TO CLIENT
NO
SAME?
YES

FIG. 1M



- MUSIC
- PHOTO ALBUMS
- BOOKS
- MOVIES
- ETC.

WO 2006/096501 PCT/US2006/007668

FIG. 1N

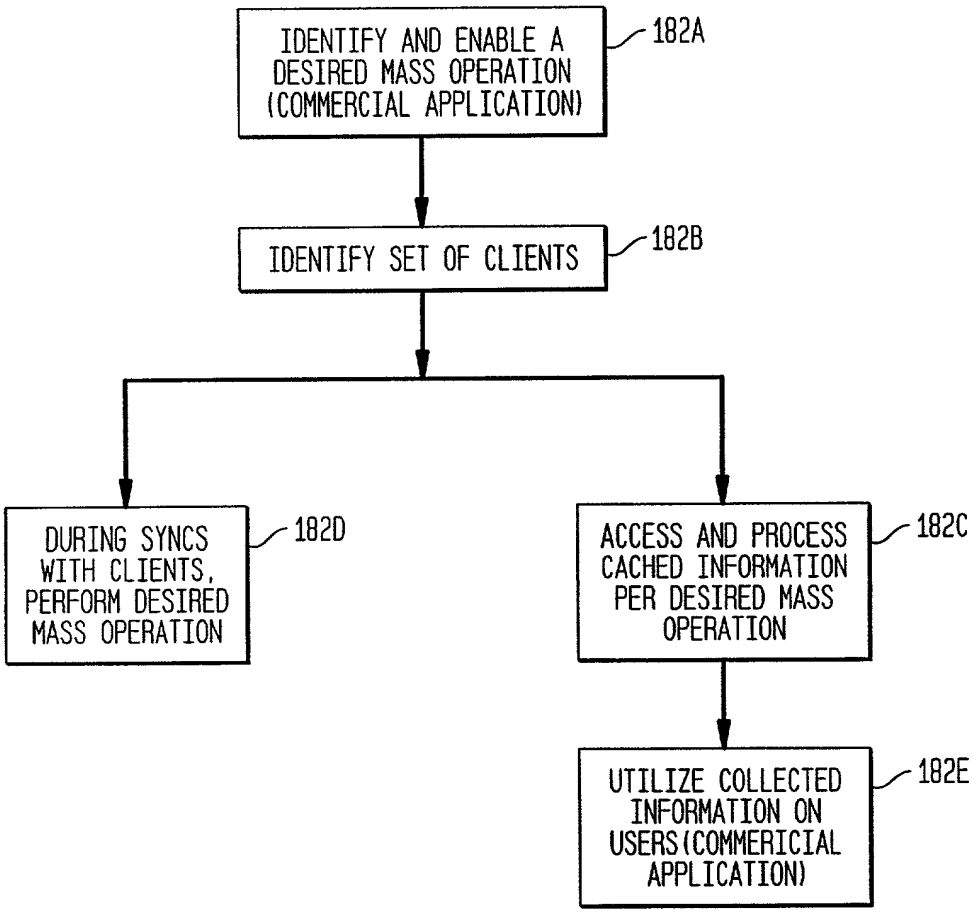

IDENTIFY AND ENABLE A DESIRED MASS OPERATION (COMMERCIAL APPLICATION)
182A
IDENTIFY SET OF CLIENTS
182B
DURING SYNCS WITH CLIENTS, PERFORM DESIRED MASS OPERATION
182D
ACCESS AND PROCESS CACHED INFORMATION PER DESIRED MASS OPERATION
182C
UTILIZE COLLECTED INFORMATION ON USERS(COMMERICIAL APPLICATION)
182E

FIG. 10

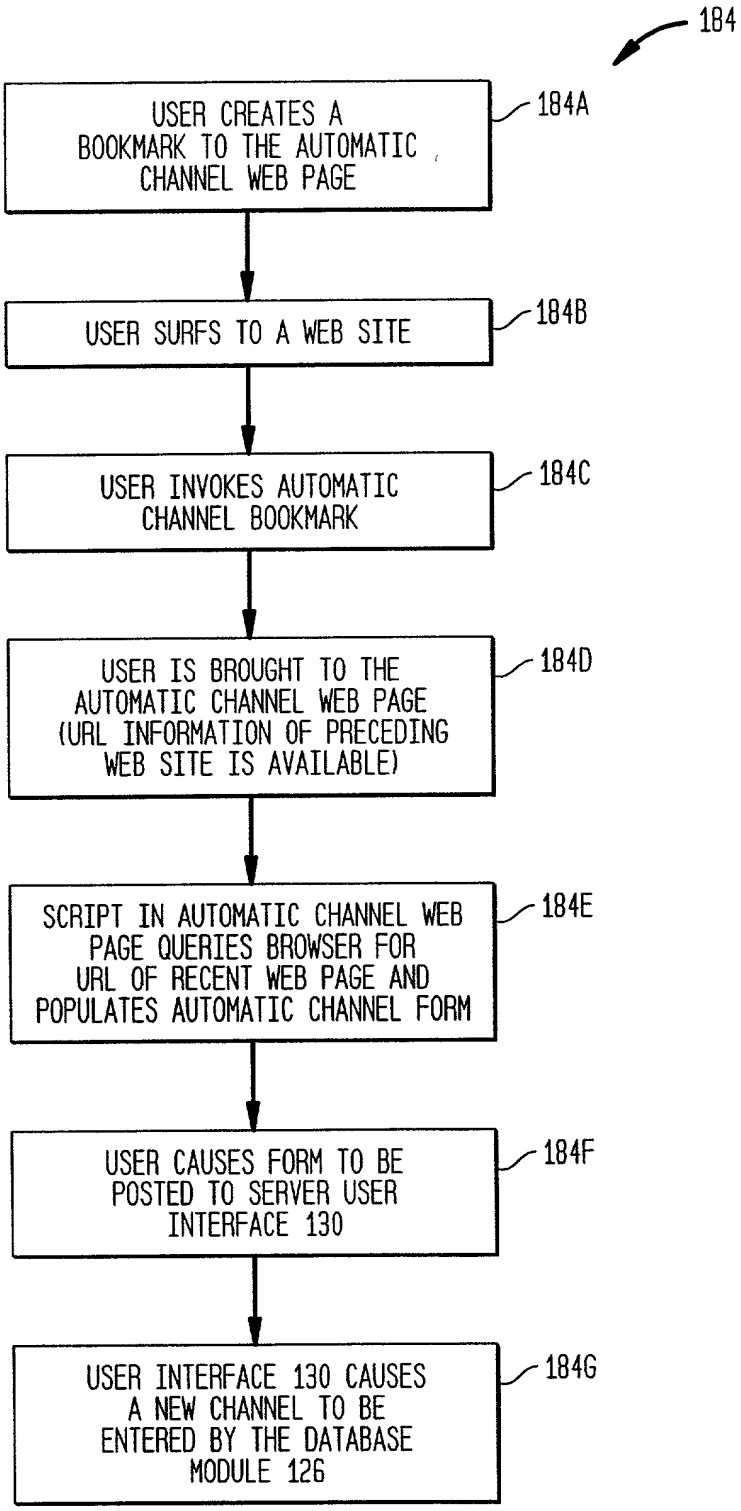

184
USER CREATES A BOOKMARK TO THE AUTOMATIC CHANNEL WEB PAGE
184A
USER SURFS TO A WEB SITE
184B
USER INVOKES AUTOMATIC CHANNEL BOOKMARK
184C
USER IS BROUGHT TO THE AUTOMATIC CHANNEL WEB PAGE (URL INFORMATION OF PRECEDING WEB SITE IS AVAILABLE)
184D
SCRIPT IN AUTOMATIC CHANNEL WEB PAGE QUERIES BROWSER FOR URL OF RECENT WEB PAGE AND POPULATES AUTOMATIC CHANNEL FORM
184E
USER CAUSES FORM TO BE POSTED TO SERVER USER INTERFACE 130
184F
USER INTERFACE 130 CAUSES A NEW CHANNEL TO BE ENTERED BY THE DATABASE MODULE 126
184G

FIG. 1P

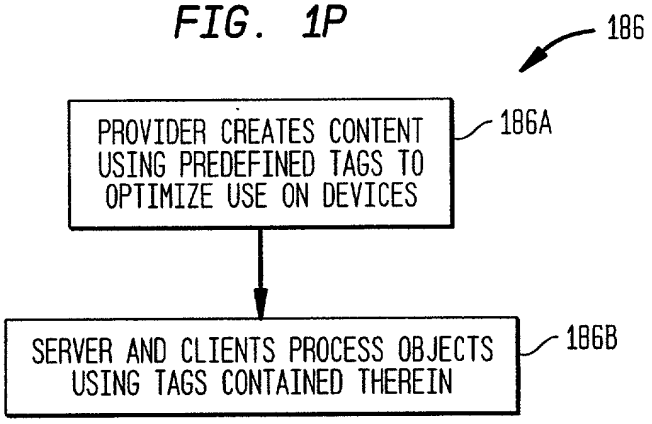


FIG. 1Q

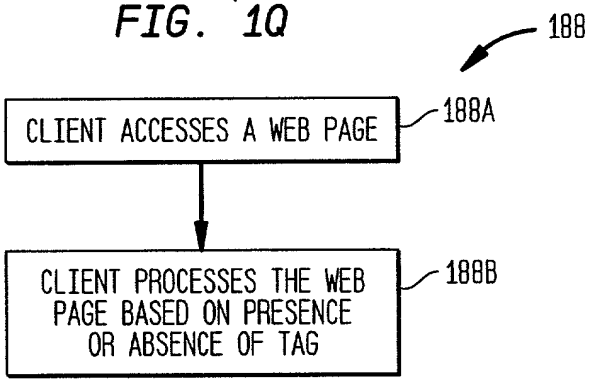


FIG. 1R

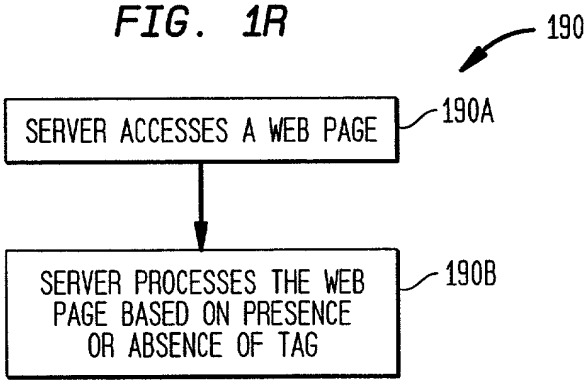


FIG. 1S

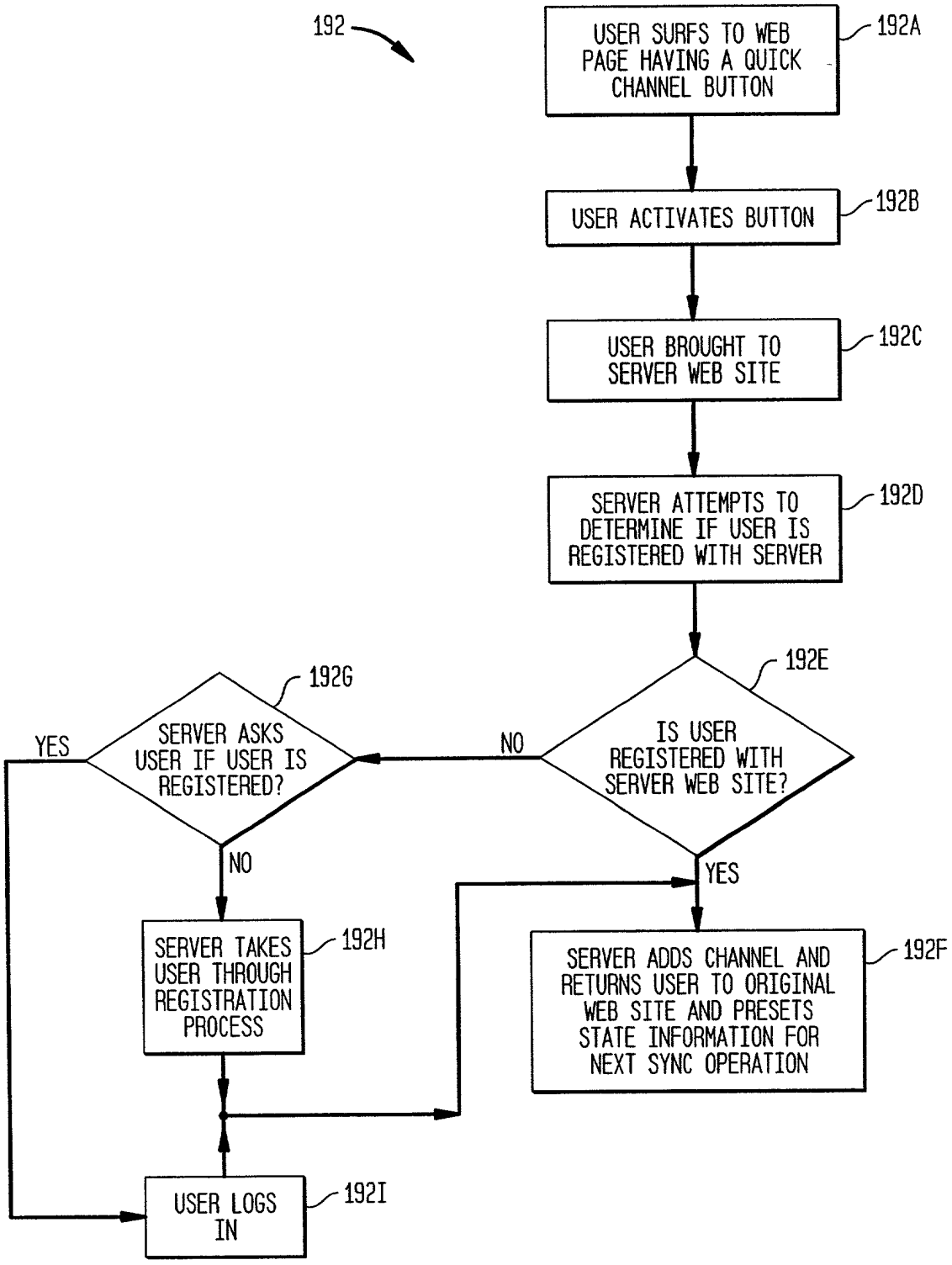

192
USER SURFS TO WEB PAGE HAVING A QUICK CHANNEL BUTTON
192A
USER ACTIVATES BUTTON
192B
USER BROUGHT TO SERVER WEB SITE
192C
SERVER ATTEMPTS TO DETERMINE IF USER IS REGISTERED WITH SERVER
192D
IS USER REGISTERED WITH SERVER WEB SITE?
192E
NO
YES
SERVER ASKS USER IF USER IS REGISTERED?
192G
YES
NO
SERVER ADDS CHANNEL AND RETURNS USER TO ORIGINAL WEB SITE AND PRESETS STATE INFORMATION FOR NEXT SYNC OPERATION
192F
SERVER TAKES USER THROUGH REGISTRATION PROCESS
192H
USER LOGS IN
192I

FIG. 1T

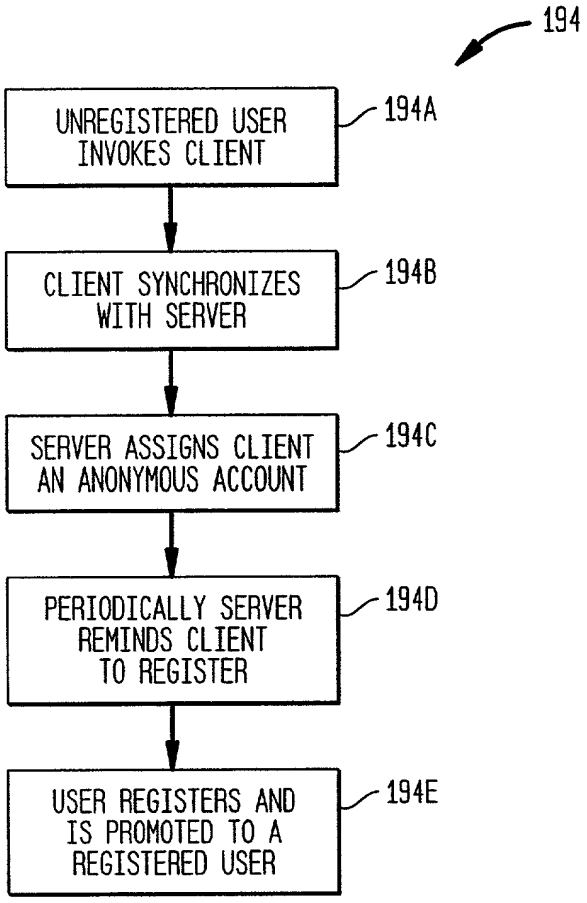

194
UNREGISTERED USER INVOKES CLIENT
194A
CLIENT SYNCHRONIZES WITH SERVER
194B
SERVER ASSIGNS CLIENT AN ANONYMOUS ACCOUNT
194C
PERIODICALLY SERVER REMINDS CLIENT TO REGISTER
194D
USER REGISTERS AND IS PROMOTED TO A REGISTERED USER
194E

FIG. 1U

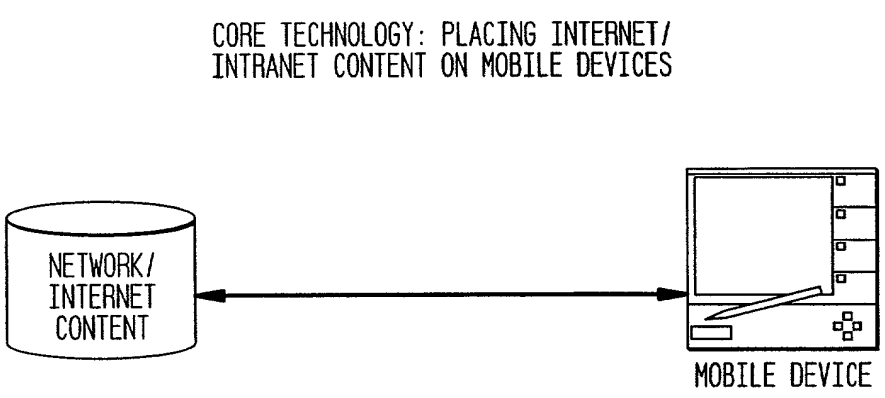

CORE TECHNOLOGY: PLACING INTERNET/ INTRANET CONTENT ON MOBILE DEVICES
NETWORK/ INTERNET CONTENT
MOBILE DEVICE

FIG. 1V

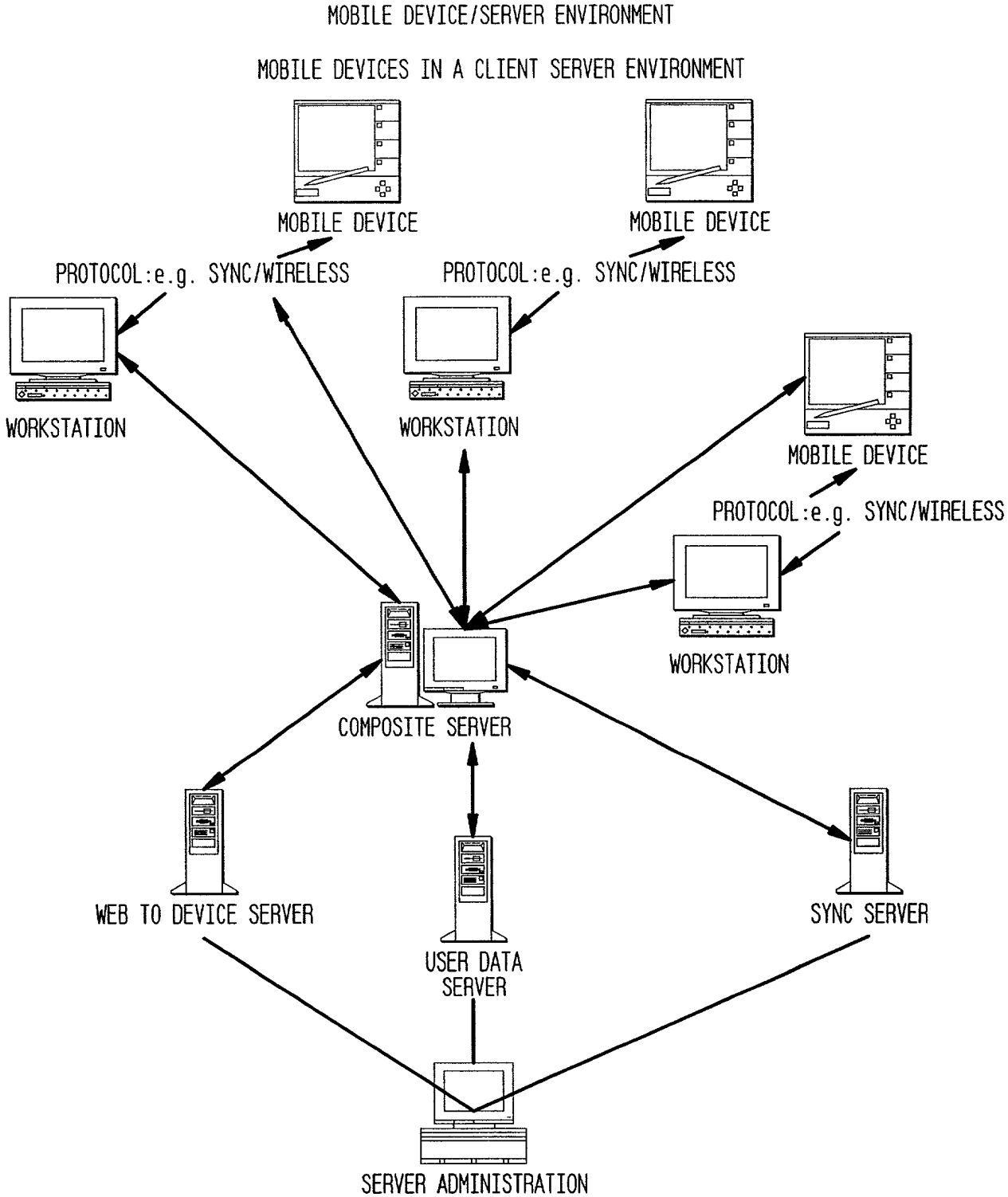

MOBILE DEVICE/SERVER ENVIRONMENT
MOBILE DEVICES IN A CLIENT SERVER ENVIRONMENT
MOBILE DEVICE
MOBILE DEVICE
PROTOCOL:e.g. SYNC/WIRELESS
PROTOCOL:e.g. SYNC/WIRELESS
WORKSTATION
WORKSTATION
MOBILE DEVICE
PROTOCOL:e.g. SYNC/WIRELESS
WORKSTATION
COMPOSITE SERVER
WEB TO DEVICE SERVER
USER DATA SERVER
SYNC SERVER
SERVER ADMINISTRATION

FIG. 1W

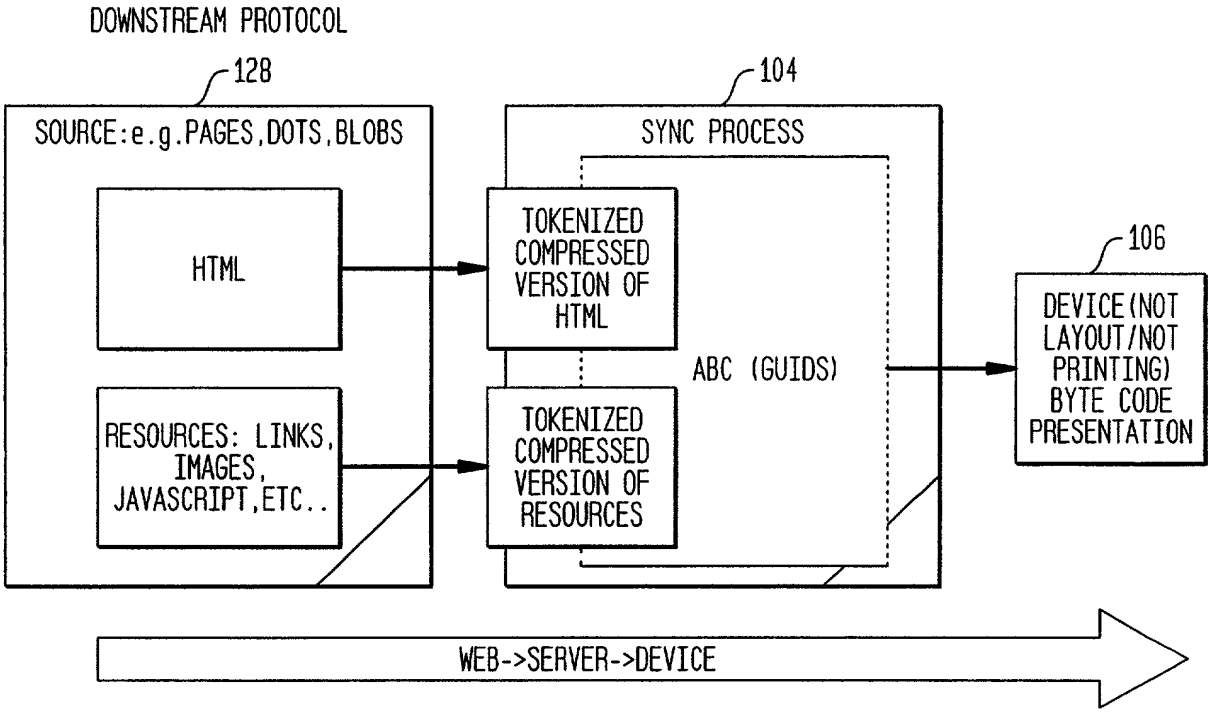

DOWNSTREAM PROTOCOL
128
SOURCE:e.g.PAGES,DOTS,BLOBS
HTML
RESOURCES: LINKS, IMAGES, JAVASCRIPT,ETC..
104
SYNC PROCESS
TOKENIZED COMPRESSED VERSION OF HTML
ABC (GUIDS)
TOKENIZED COMPRESSED VERSION OF RESOURCES
106
DEVICE(NOT LAYOUT/NOT PRINTING) BYTE CODE PRESENTATION
WEB->SERVER->DEVICE

FIG. 1X

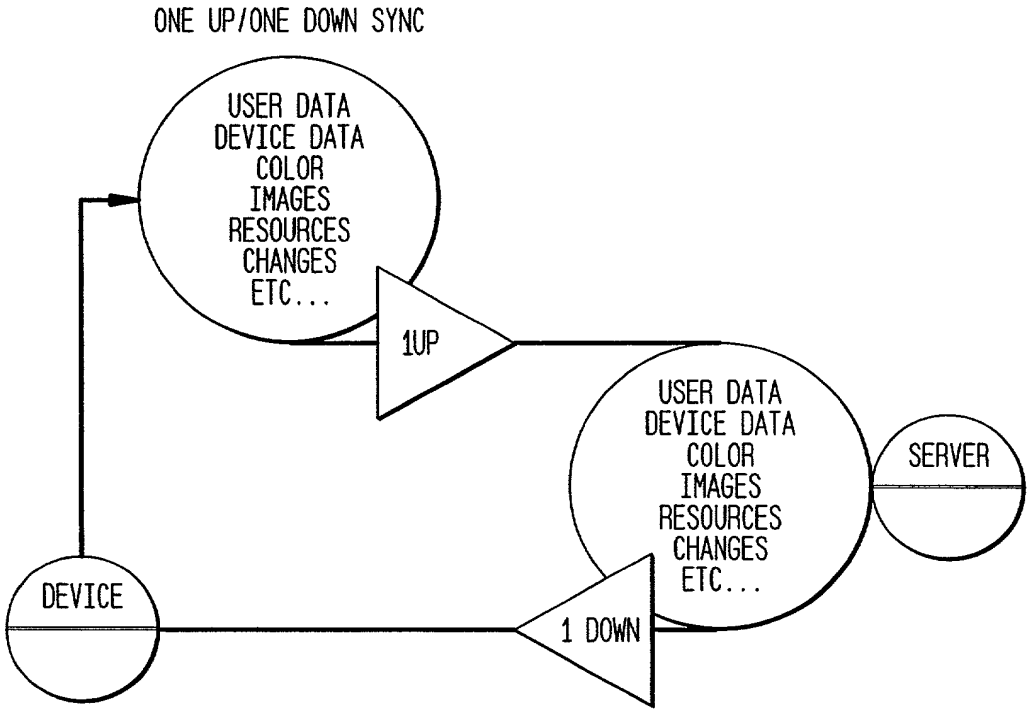

ONE UP/ONE DOWN SYNC
USER DATA
DEVICE DATA
COLOR
IMAGES
RESOURCES
CHANGES
ETC...
1UP
USER DATA
DEVICE DATA
COLOR
IMAGES
RESOURCES
CHANGES
ETC...
SERVER
DEVICE
1 DOWN

FIG. 1Y

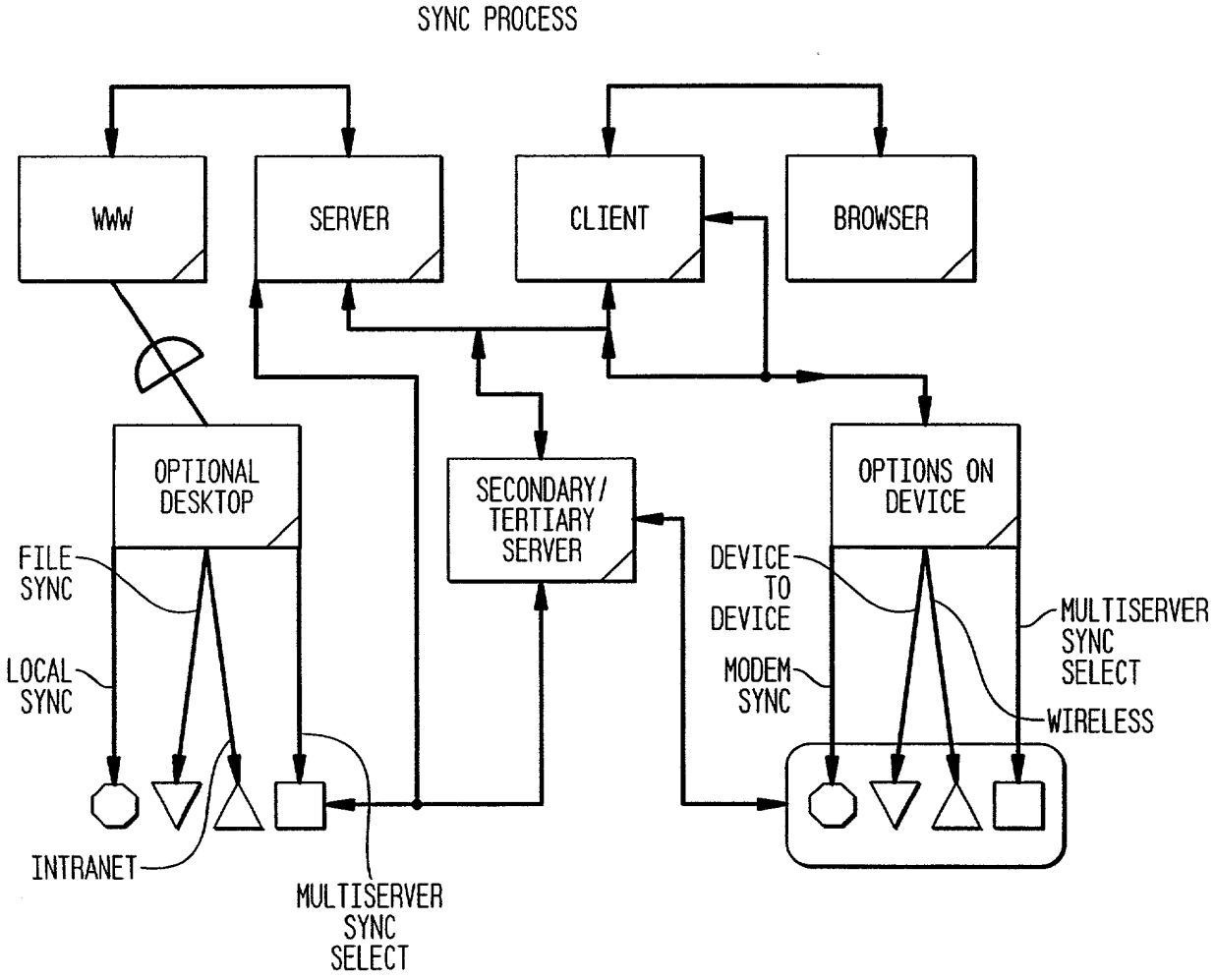

SYNC PROCESS
WWW
SERVER
CLIENT
BROWSER
OPTIONAL DESKTOP
SECONDARY/ TERTIARY SERVER
OPTIONS ON DEVICE
FILE SYNC
LOCAL SYNC
INTRANET
MULTISERVER SYNC SELECT
DEVICE TO DEVICE
MODEM SYNC
MULTISERVER SYNC SELECT
WIRELESS

FIG. 1Z

GRANULAR VARIABLE PROTOCOL

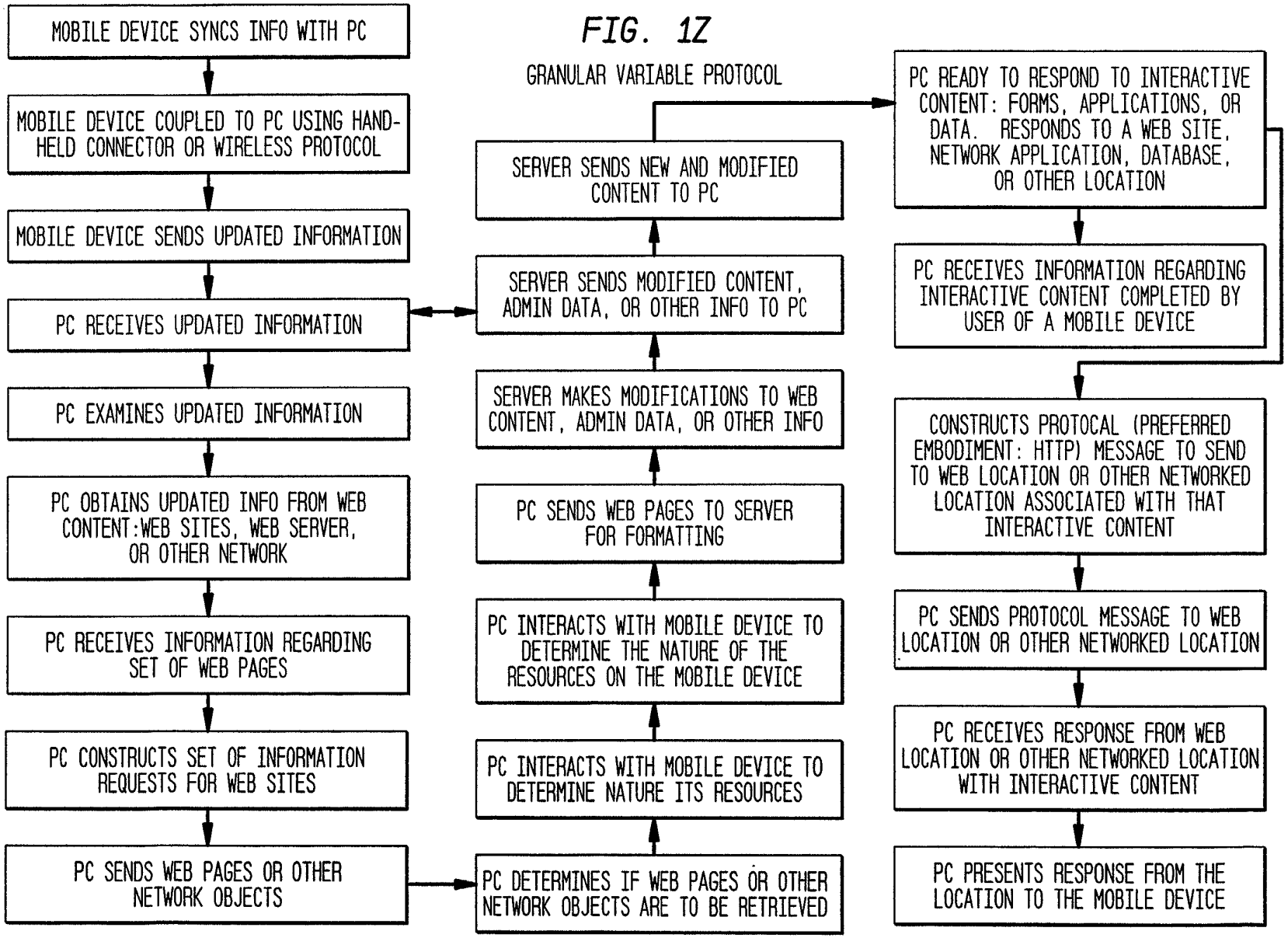


FIG. 1AA

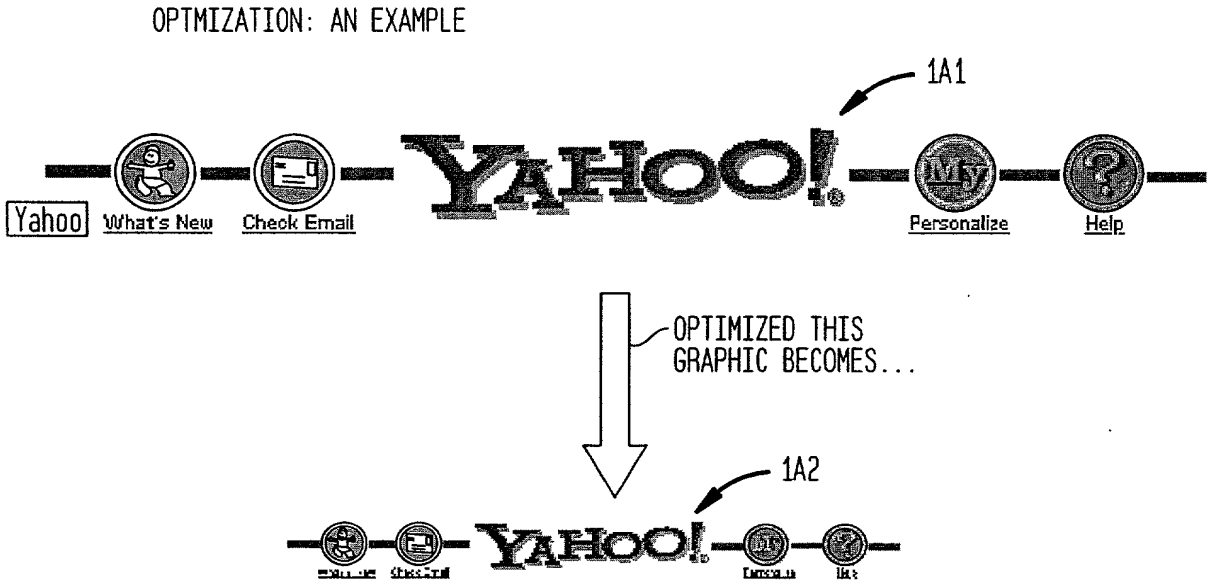

OPTMIZATION: AN EXAMPLE
1A1
Yahoo
What's New
Check Email
YAHOO!
Personalize
Help
OPTIMIZED THIS
GRAPHIC BECOMES...
1A2
YAHOO!

FIG. 1AB

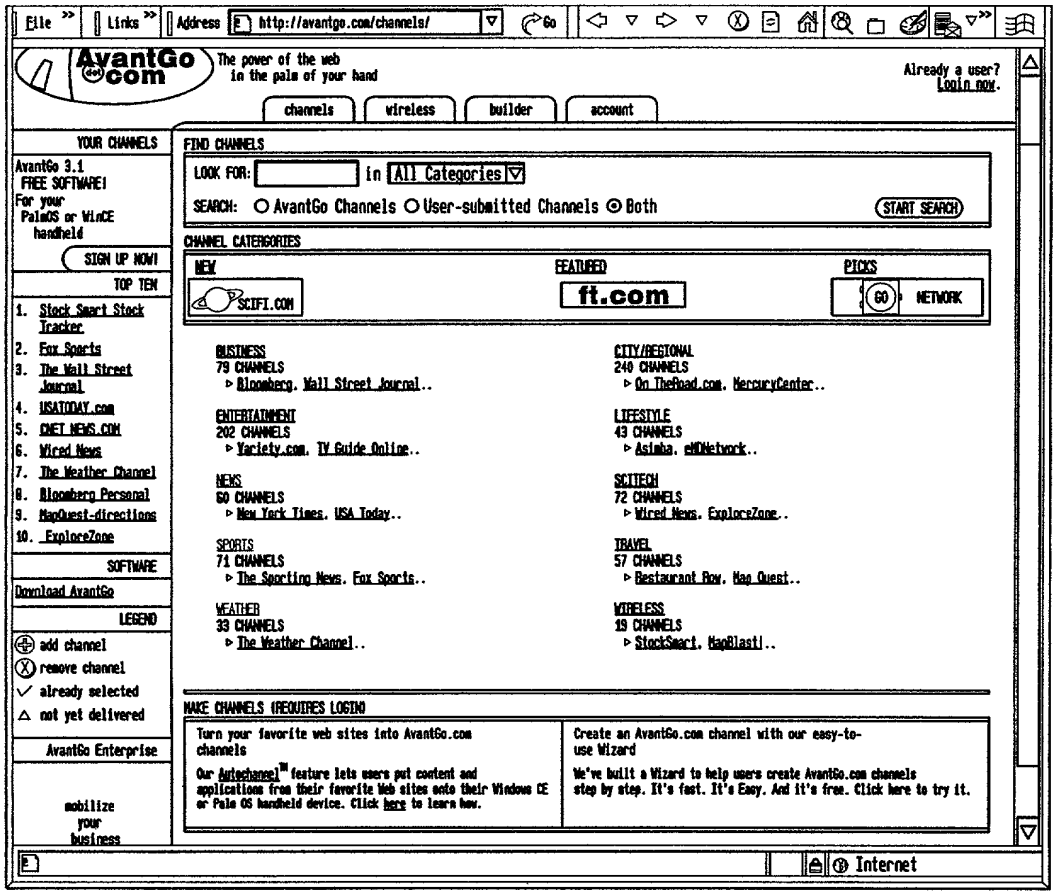

File
Links
Address
http://avantgo.com/channels/
Go
AvantGo com
The power of the web in the palm of your hand
Already a user? Login now.
channels
wireless
builder
account
YOUR CHANNELS
AvantGo 3.1 FREE SOFTWARE! For your PalmOS or WinCE handheld
SIGN UP NOW!
TOP TEN
1. Stock Smart Stock Tracker
2. Fox Sports
3. The Wall Street Journal
4. USATODAY.com
5. CNET NEWS.COM
6. Wired News
7. The Weather Channel
8. Bloomberg Personal
9. MapQuest-directions
10. ExploreZone
SOFTWARE
Download AvantGo
LEGEND
add channel
remove channel
already selected
not yet delivered
AvantGo Enterprise
mobilize your business
FIND CHANNELS
LOOK FOR:
in All Categories
SEARCH: AvantGo Channels User-submitted Channels Both
START SEARCH
CHANNEL CATEGORIES
NEW
SCIFI.COM
FEATURED
ft.com
PICKS
GO NETWORK
BUSINESS
79 CHANNELS
Bloomberg, Wall Street Journal..
CITY/REGIONAL
240 CHANNELS
On TheRoad.com, MercuryCenter..
ENTERTAINMENT
202 CHANNELS
Variety.com, TV Guide Online..
LIFESTYLE
43 CHANNELS
Asiaba, eWDNetwork..
NEWS
60 CHANNELS
New York Times, USA Today..
SCITECH
72 CHANNELS
Wired News, ExploreZone..
SPORTS
71 CHANNELS
The Sporting News, Fox Sports..
TRAVEL
57 CHANNELS
Restaurant Row, Map Quest..
WEATHER
33 CHANNELS
The Weather Channel..
WIRELESS
19 CHANNELS
StockSmart, MapBlast!..
MAKE CHANNELS (REQUIRES LOGIN)
Turn your favorite web sites into AvantGo.com channels
Our Autochannel™ feature lets users put content and applications from their favorite Web sites onto their Windows CE or Palm OS handheld device. Click here to learn how.
Create an AvantGo.com channel with our easy-to-use Wizard
We've built a Wizard to help users create AvantGo.com channels step by step. It's fast. It's Easy. And it's free. Click here to try it.
Internet

FIG. 2

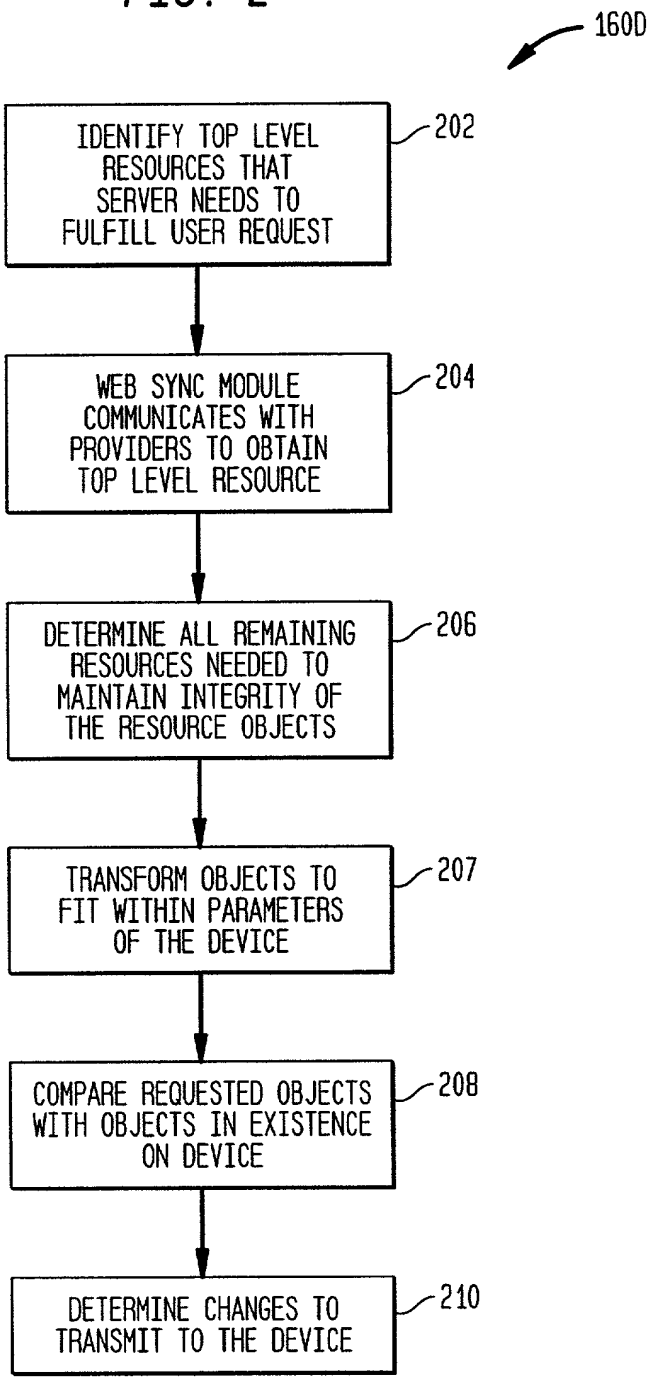

160D
IDENTIFY TOP LEVEL RESOURCES THAT SERVER NEEDS TO FULFILL USER REQUEST
202
WEB SYNC MODULE COMMUNICATES WITH PROVIDERS TO OBTAIN TOP LEVEL RESOURCE
204
DETERMINE ALL REMAINING RESOURCES NEEDED TO MAINTAIN INTEGRITY OF THE RESOURCE OBJECTS
206
TRANSFORM OBJECTS TO FIT WITHIN PARAMETERS OF THE DEVICE
207
COMPARE REQUESTED OBJECTS WITH OBJECTS IN EXISTENCE ON DEVICE
208
DETERMINE CHANGES TO TRANSMIT TO THE DEVICE
210

FIG. 3A

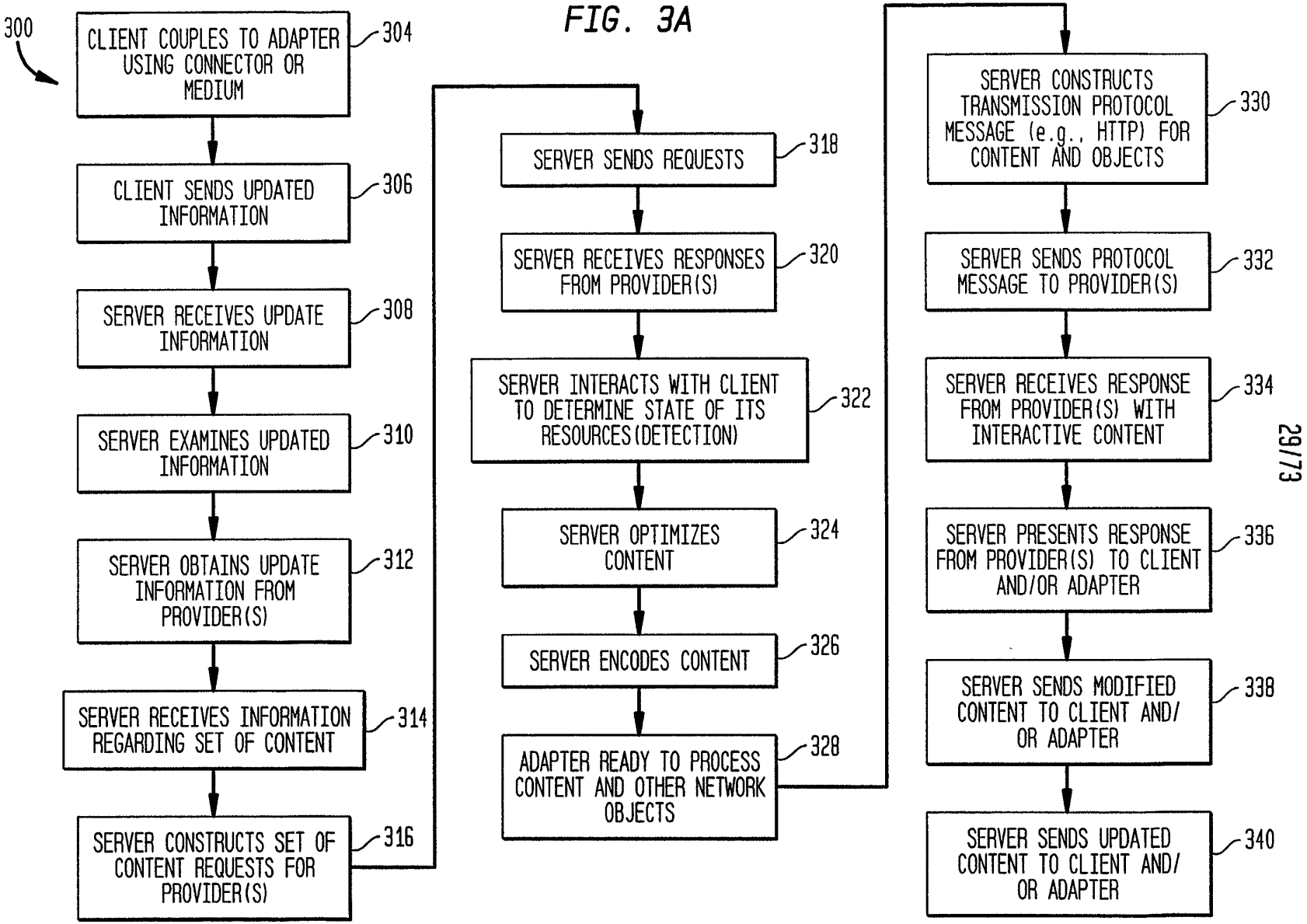

300
CLIENT COUPLES TO ADAPTER USING CONNECTOR OR MEDIUM
304
CLIENT SENDS UPDATED INFORMATION
306
SERVER RECEIVES UPDATE INFORMATION
308
SERVER EXAMINES UPDATED INFORMATION
310
SERVER OBTAINS UPDATE INFORMATION FROM PROVIDER(S)
312
SERVER RECEIVES INFORMATION REGARDING SET OF CONTENT
314
SERVER CONSTRUCTS SET OF CONTENT REQUESTS FOR PROVIDER(S)
316
SERVER SENDS REQUESTS
318
SERVER RECEIVES RESPONSES FROM PROVIDER(S)
320
SERVER INTERACTS WITH CLIENT TO DETERMINE STATE OF ITS RESOURCES(DETECTION)
322
SERVER OPTIMIZES CONTENT
324
SERVER ENCODES CONTENT
326
ADAPTER READY TO PROCESS CONTENT AND OTHER NETWORK OBJECTS
328
SERVER CONSTRUCTS TRANSMISSION PROTOCOL MESSAGE (e.g., HTTP) FOR CONTENT AND OBJECTS
330
SERVER SENDS PROTOCOL MESSAGE TO PROVIDER(S)
332
SERVER RECEIVES RESPONSE FROM PROVIDER(S) WITH INTERACTIVE CONTENT
334
SERVER PRESENTS RESPONSE FROM PROVIDER(S) TO CLIENT AND/OR ADAPTER
336
SERVER SENDS MODIFIED CONTENT TO CLIENT AND/OR ADAPTER
338
SERVER SENDS UPDATED CONTENT TO CLIENT AND/OR ADAPTER
340

FIG. 3B

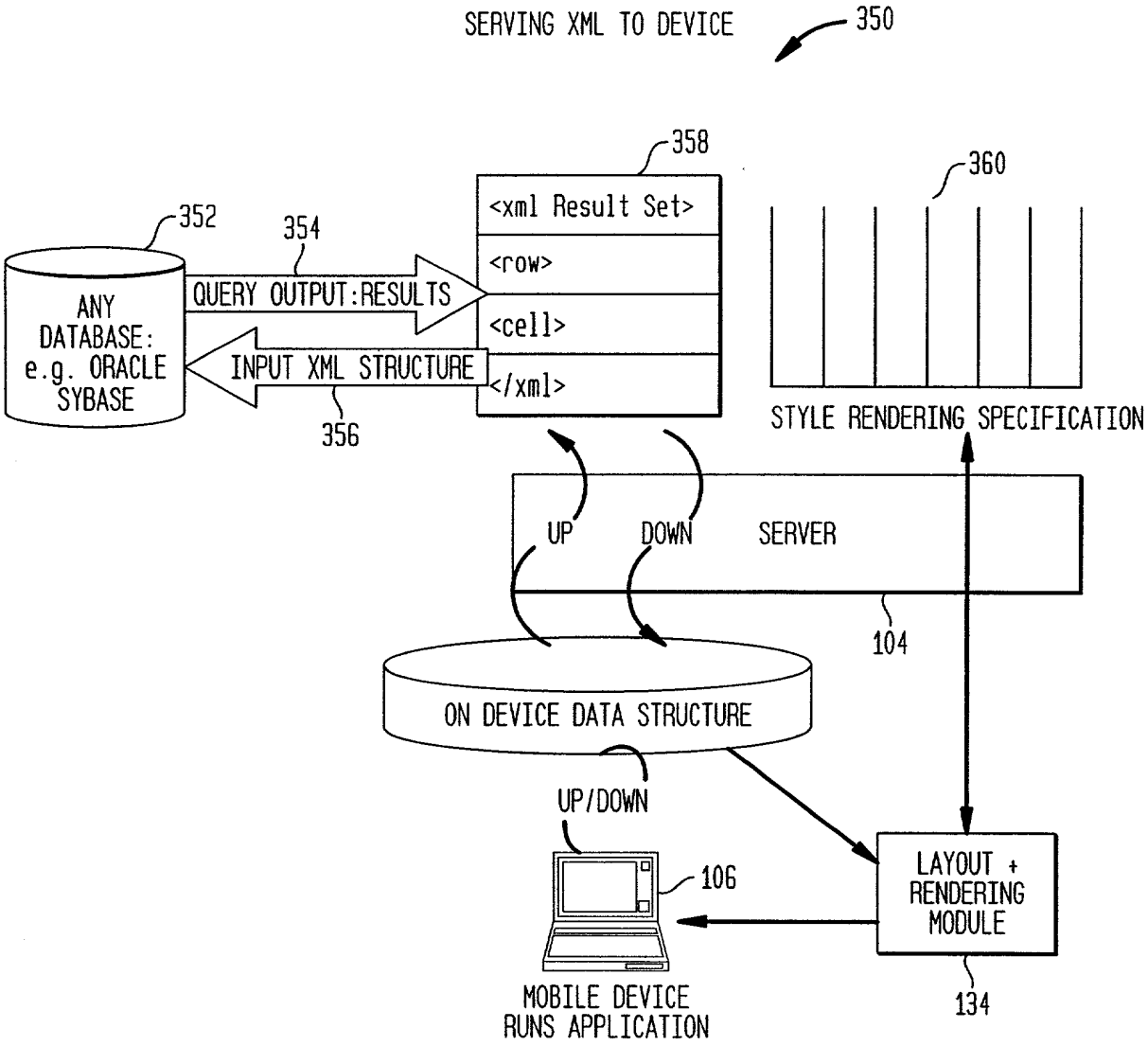

SERVING XML TO DEVICE
350
358
<xml Result Set>
<row>
<cell>
</xml>
360
352
354
ANY DATABASE: e.g. ORACLE SYBASE
QUERY OUTPUT:RESULTS
INPUT XML STRUCTURE
356
STYLE RENDERING SPECIFICATION
UP
DOWN
SERVER
104
ON DEVICE DATA STRUCTURE
UP/DOWN
106
LAYOUT + RENDERING MODULE
134
MOBILE DEVICE RUNS APPLICATION

FIG. 3C

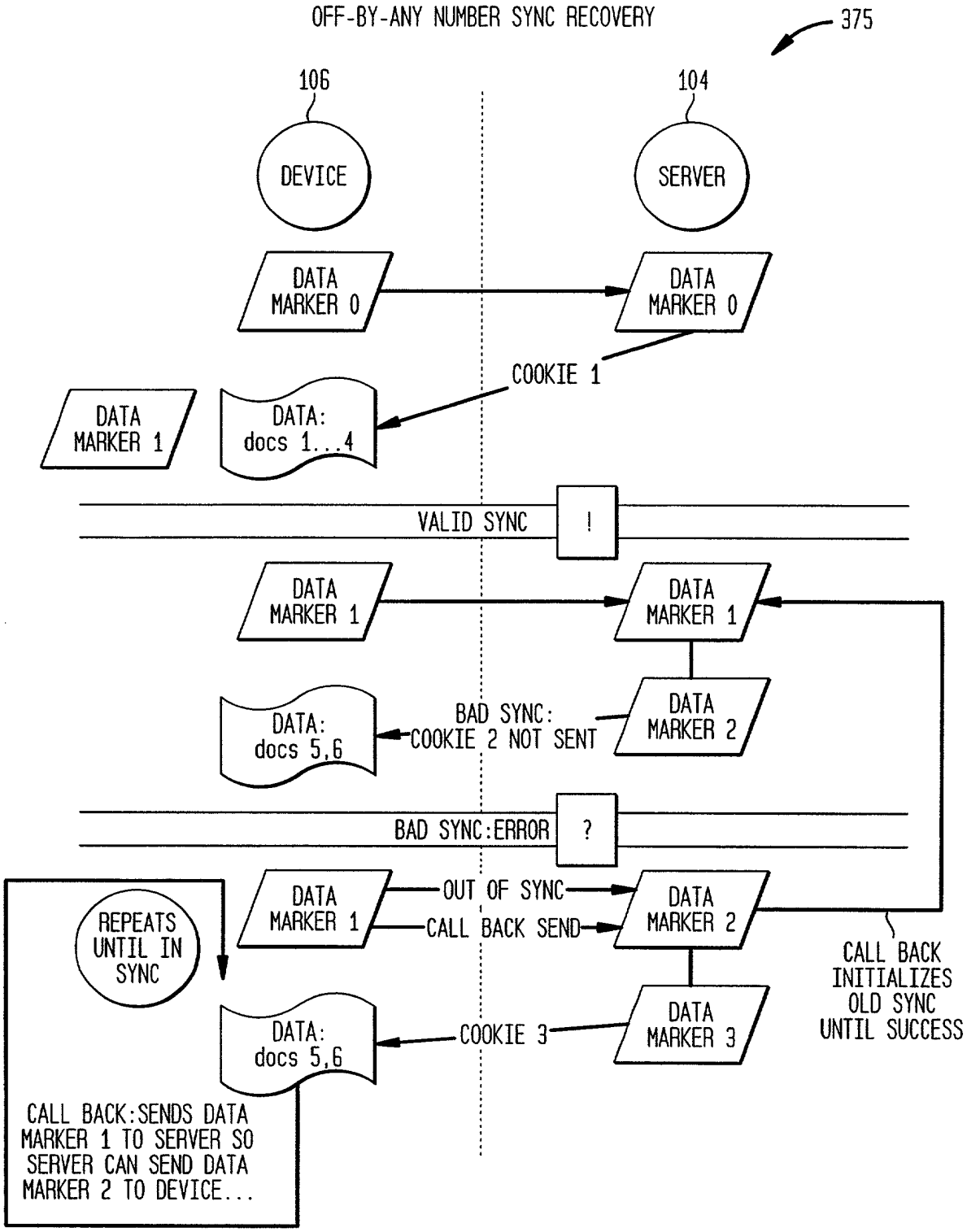

OFF-BY-ANY NUMBER SYNC RECOVERY
375
106
104
DEVICE
SERVER
DATA MARKER 0
DATA MARKER 0
COOKIE 1
DATA MARKER 1
DATA: docs 1...4
VALID SYNC
!
DATA MARKER 1
DATA MARKER 1
DATA MARKER 2
DATA: docs 5,6
BAD SYNC: COOKIE 2 NOT SENT
BAD SYNC:ERROR
?
DATA MARKER 1
OUT OF SYNC
CALL BACK SEND
DATA MARKER 2
CALL BACK INITIALIZES OLD SYNC UNTIL SUCCESS
REPEATS UNTIL IN SYNC
DATA MARKER 3
COOKIE 3
DATA: docs 5,6
CALL BACK:SENDS DATA MARKER 1 TO SERVER SO SERVER CAN SEND DATA MARKER 2 TO DEVICE...

FIG. 4A

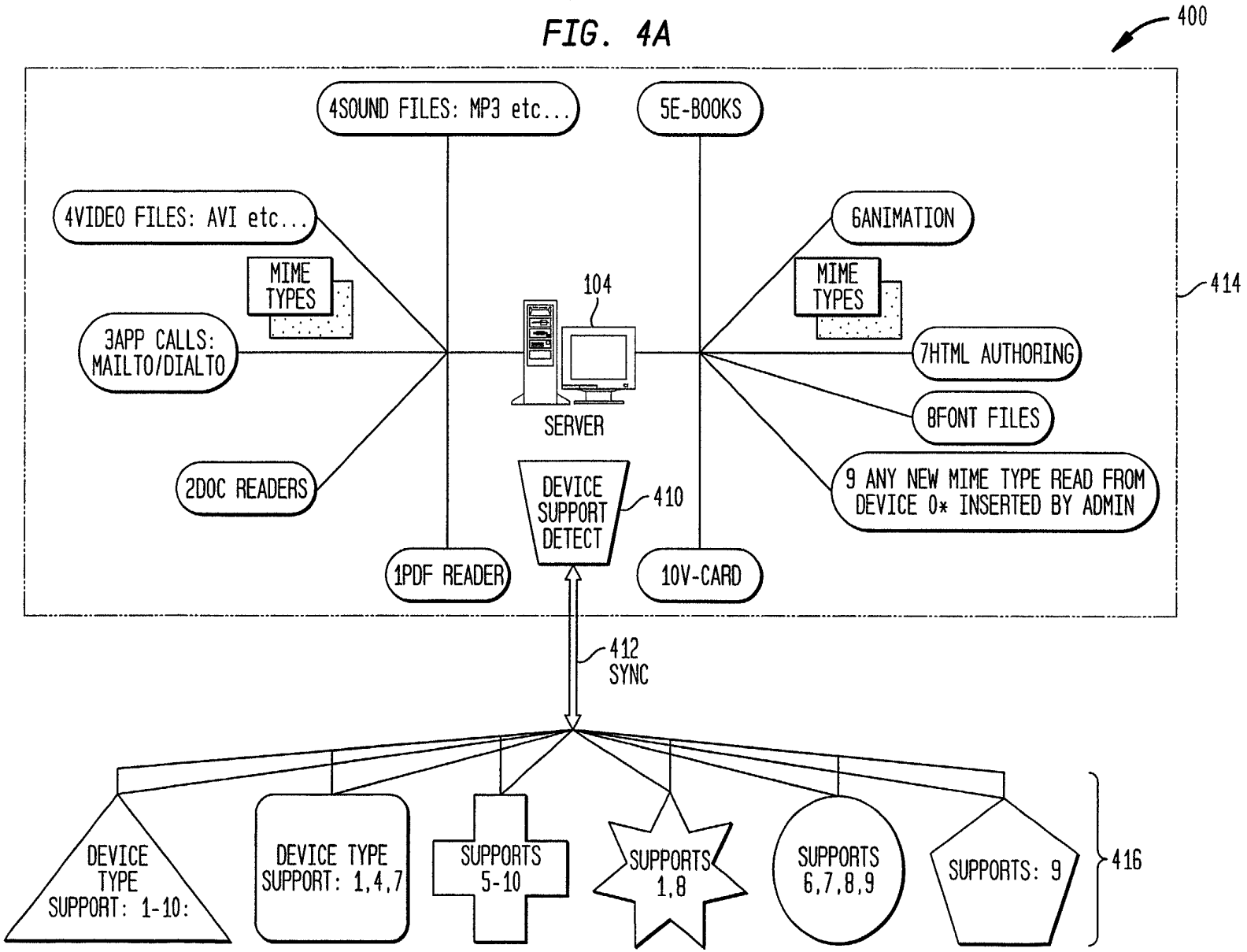

400
4SOUND FILES: MP3 etc...
5E-BOOKS
4VIDEO FILES: AVI etc...
MIME TYPES
3APP CALLS: MAILTO/DIALTO
2DOC READERS
104
SERVER
6ANIMATION
MIME TYPES
7HTML AUTHORING
8FONT FILES
9 ANY NEW MIME TYPE READ FROM DEVICE 0* INSERTED BY ADMIN
414
DEVICE SUPPORT DETECT
410
1PDF READER
10V-CARD
412
SYNC
DEVICE TYPE SUPPORT: 1-10:
DEVICE TYPE SUPPORT: 1,4,7
SUPPORTS 5-10
SUPPORTS 1,8
SUPPORTS 6,7,8,9
SUPPORTS: 9
416

FIG. 4B

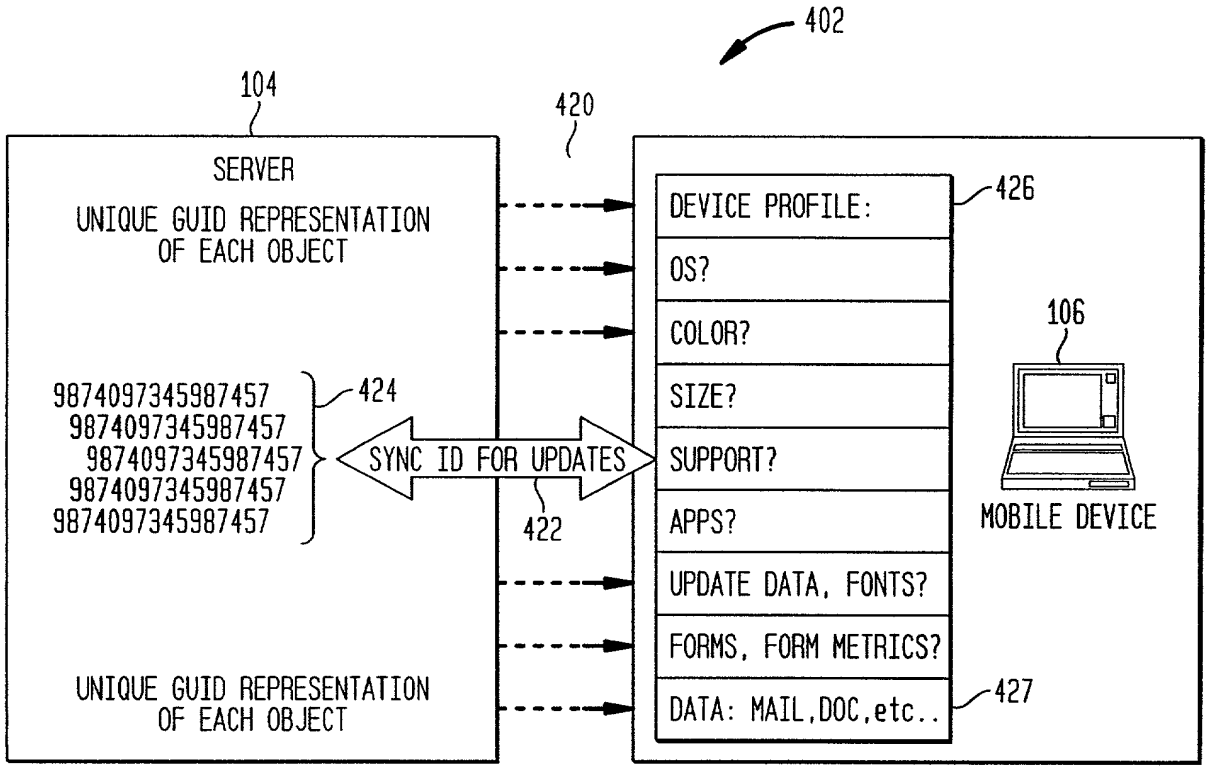

402
104
420
SERVER
UNIQUE GUID REPRESENTATION OF EACH OBJECT
9874097345987457
9874097345987457
9874097345987457
9874097345987457
9874097345987457
424
SYNC ID FOR UPDATES
422
UNIQUE GUID REPRESENTATION OF EACH OBJECT
DEVICE PROFILE:
426
OS?
COLOR?
SIZE?
SUPPORT?
APPS?
UPDATE DATA, FONTS?
FORMS, FORM METRICS?
DATA: MAIL,DOC,etc..
427
106
MOBILE DEVICE

FIG. 5A

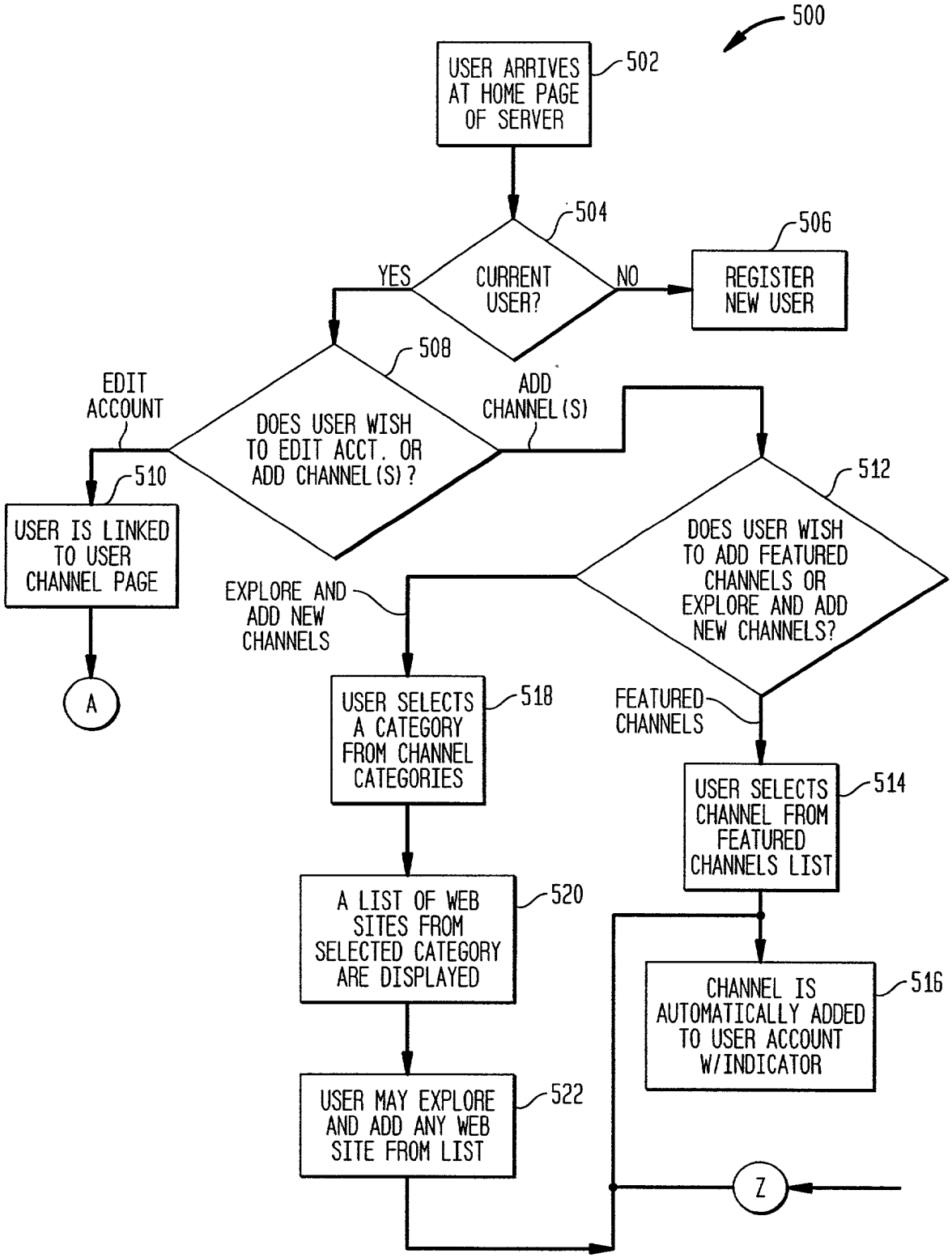

500
USER ARRIVES AT HOME PAGE OF SERVER
502
CURRENT USER?
504
YES
NO
REGISTER NEW USER
506
DOES USER WISH TO EDIT ACCT. OR ADD CHANNEL(S)?
508
EDIT ACCOUNT
ADD CHANNEL(S)
USER IS LINKED TO USER CHANNEL PAGE
510
A
DOES USER WISH TO ADD FEATURED CHANNELS OR EXPLORE AND ADD NEW CHANNELS?
512
EXPLORE AND ADD NEW CHANNELS
FEATURED CHANNELS
USER SELECTS A CATEGORY FROM CHANNEL CATEGORIES
518
USER SELECTS CHANNEL FROM FEATURED CHANNELS LIST
514
A LIST OF WEB SITES FROM SELECTED CATEGORY ARE DISPLAYED
520
CHANNEL IS AUTOMATICALLY ADDED TO USER ACCOUNT W/INDICATOR
516
USER MAY EXPLORE AND ADD ANY WEB SITE FROM LIST
522
Z

FIG. 5B

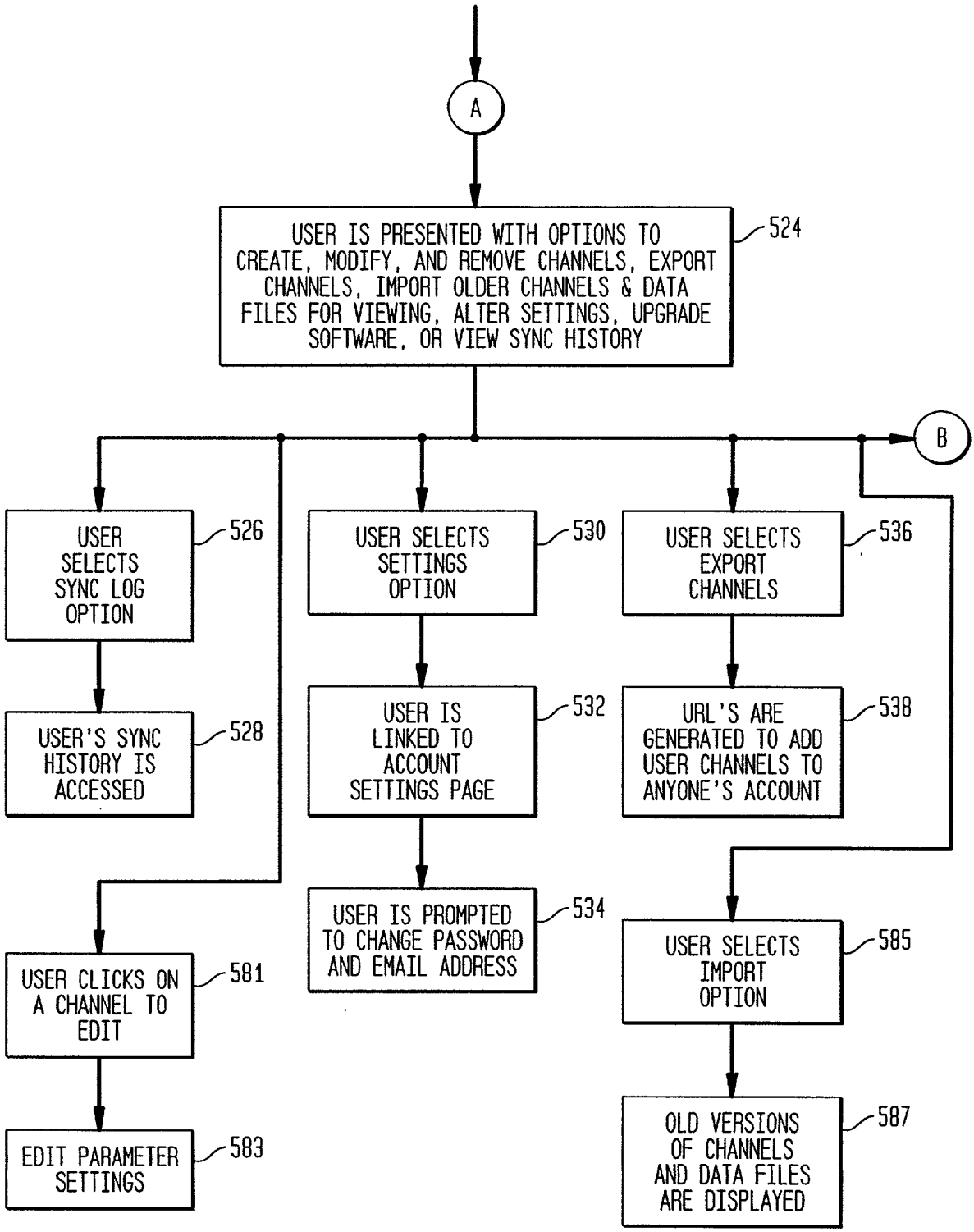

A
USER IS PRESENTED WITH OPTIONS TO CREATE, MODIFY, AND REMOVE CHANNELS, EXPORT CHANNELS, IMPORT OLDER CHANNELS & DATA FILES FOR VIEWING, ALTER SETTINGS, UPGRADE SOFTWARE, OR VIEW SYNC HISTORY
524
B
USER SELECTS SYNC LOG OPTION
526
USER'S SYNC HISTORY IS ACCESSED
528
USER CLICKS ON A CHANNEL TO EDIT
581
EDIT PARAMETER SETTINGS
583
USER SELECTS SETTINGS OPTION
530
USER IS LINKED TO ACCOUNT SETTINGS PAGE
532
USER IS PROMPTED TO CHANGE PASSWORD AND EMAIL ADDRESS
534
USER SELECTS EXPORT CHANNELS
536
URL'S ARE GENERATED TO ADD USER CHANNELS TO ANYONE'S ACCOUNT
538
USER SELECTS IMPORT OPTION
585
OLD VERSIONS OF CHANNELS AND DATA FILES ARE DISPLAYED
587

FIG. 5C

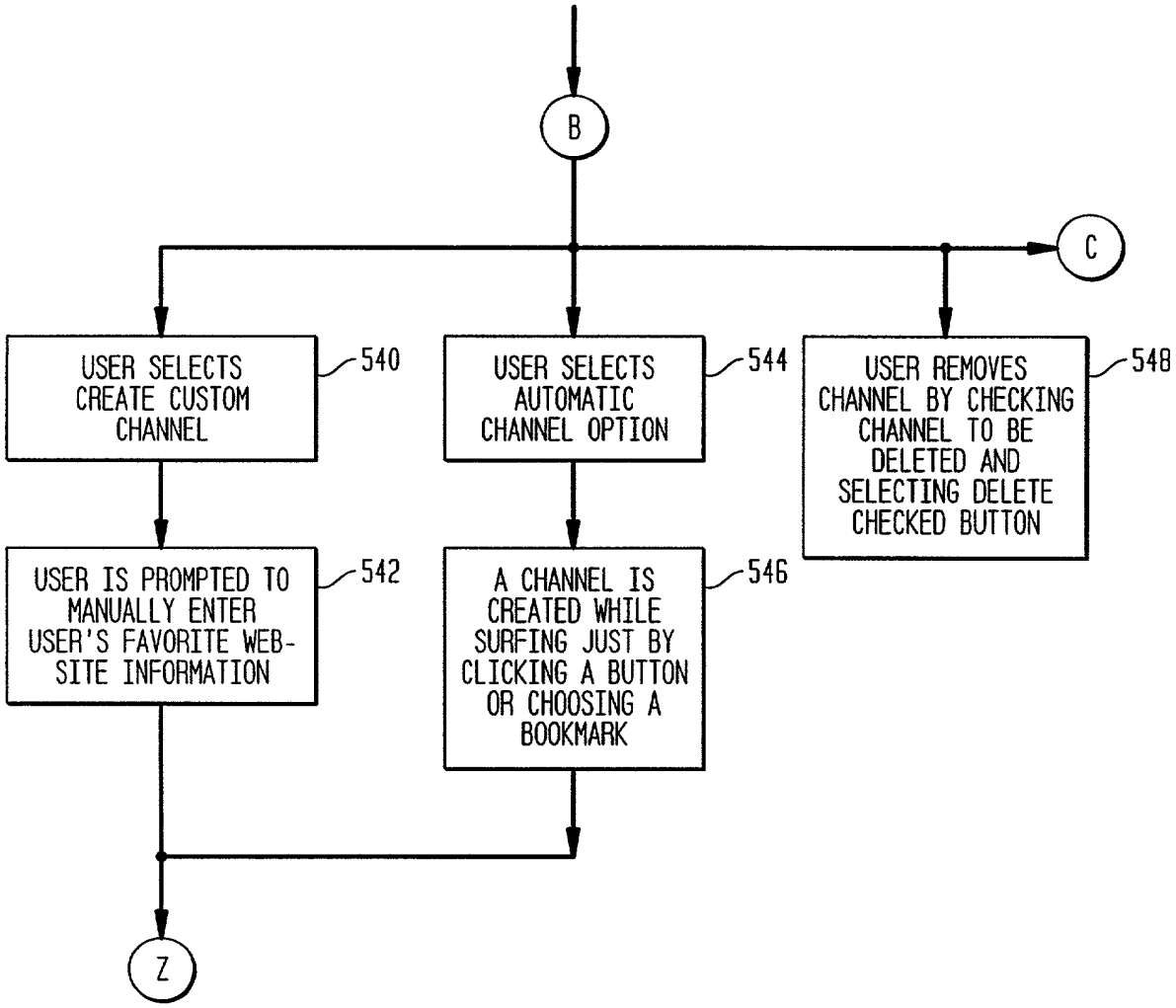

B
C
USER SELECTS CREATE CUSTOM CHANNEL
540
USER IS PROMPTED TO MANUALLY ENTER USER'S FAVORITE WEB-SITE INFORMATION
542
USER SELECTS AUTOMATIC CHANNEL OPTION
544
A CHANNEL IS CREATED WHILE SURFING JUST BY CLICKING A BUTTON OR CHOOSING A BOOKMARK
546
USER REMOVES CHANNEL BY CHECKING CHANNEL TO BE DELETED AND SELECTING DELETE CHECKED BUTTON
548
Z

FIG. 5D

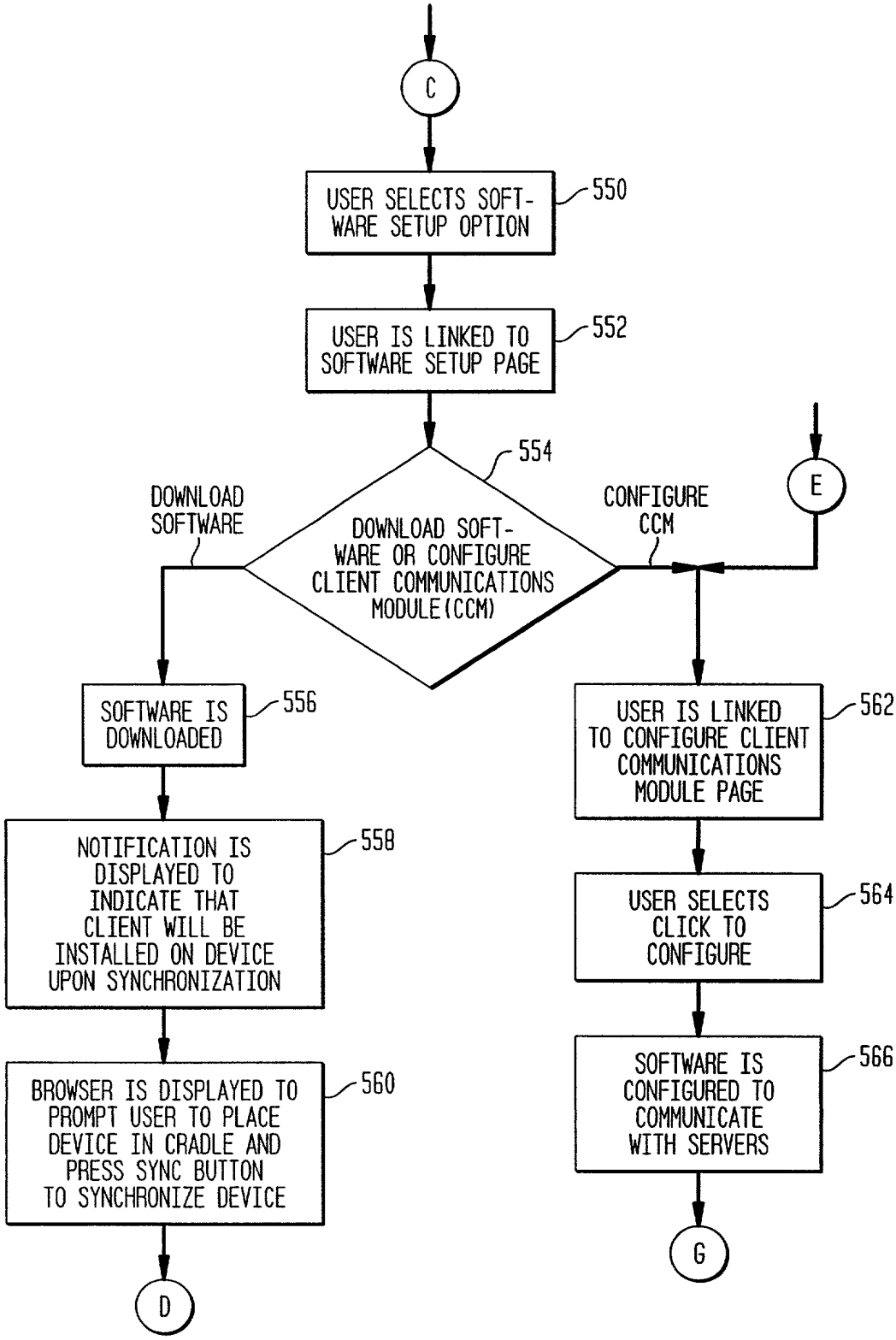

C
USER SELECTS SOFTWARE SETUP OPTION
550
USER IS LINKED TO SOFTWARE SETUP PAGE
552
554
DOWNLOAD SOFTWARE
DOWNLOAD SOFTWARE OR CONFIGURE CLIENT COMMUNICATIONS MODULE(CCM)
CONFIGURE CCM
E
SOFTWARE IS DOWNLOADED
556
NOTIFICATION IS DISPLAYED TO INDICATE THAT CLIENT WILL BE INSTALLED ON DEVICE UPON SYNCHRONIZATION
558
BROWSER IS DISPLAYED TO PROMPT USER TO PLACE DEVICE IN CRADLE AND PRESS SYNC BUTTON TO SYNCHRONIZE DEVICE
560
D
USER IS LINKED TO CONFIGURE CLIENT COMMUNICATIONS MODULE PAGE
562
USER SELECTS CLICK TO CONFIGURE
564
SOFTWARE IS CONFIGURED TO COMMUNICATE WITH SERVERS
566
G

FIG. 5E

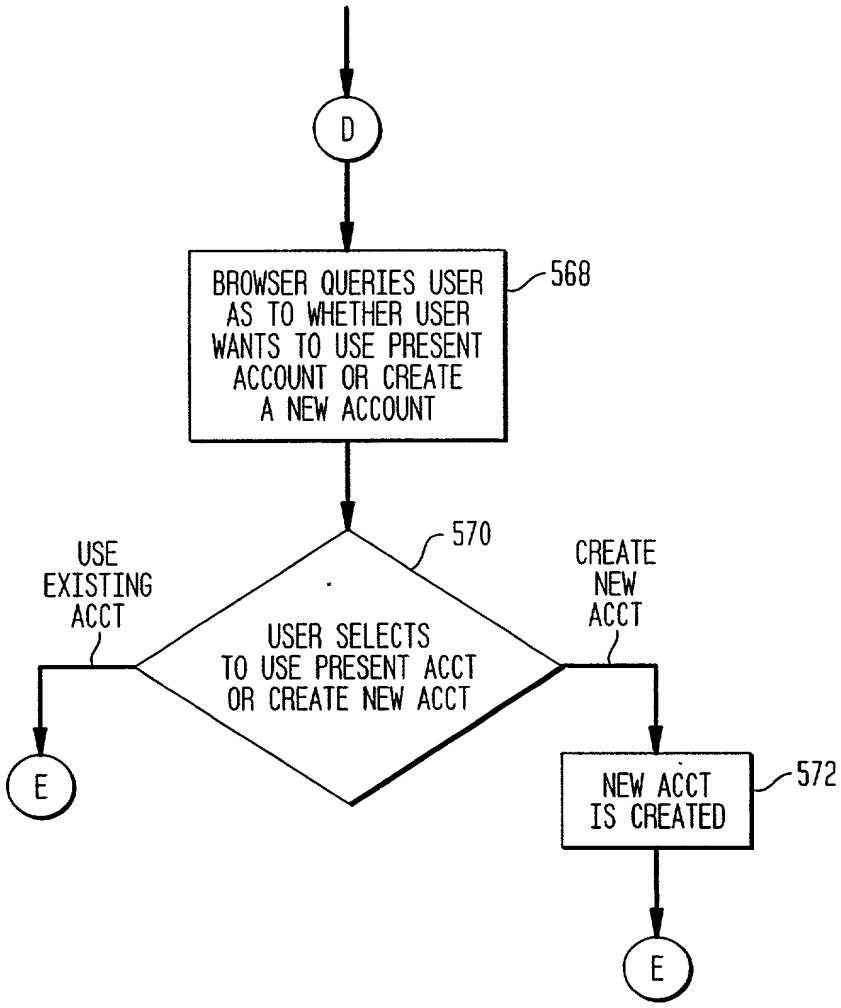

D
BROWSER QUERIES USER AS TO WHETHER USER WANTS TO USE PRESENT ACCOUNT OR CREATE A NEW ACCOUNT
568
570
USER SELECTS TO USE PRESENT ACCT OR CREATE NEW ACCT
USE EXISTING ACCT
CREATE NEW ACCT
E
NEW ACCT IS CREATED
572
E

FIG. 5F

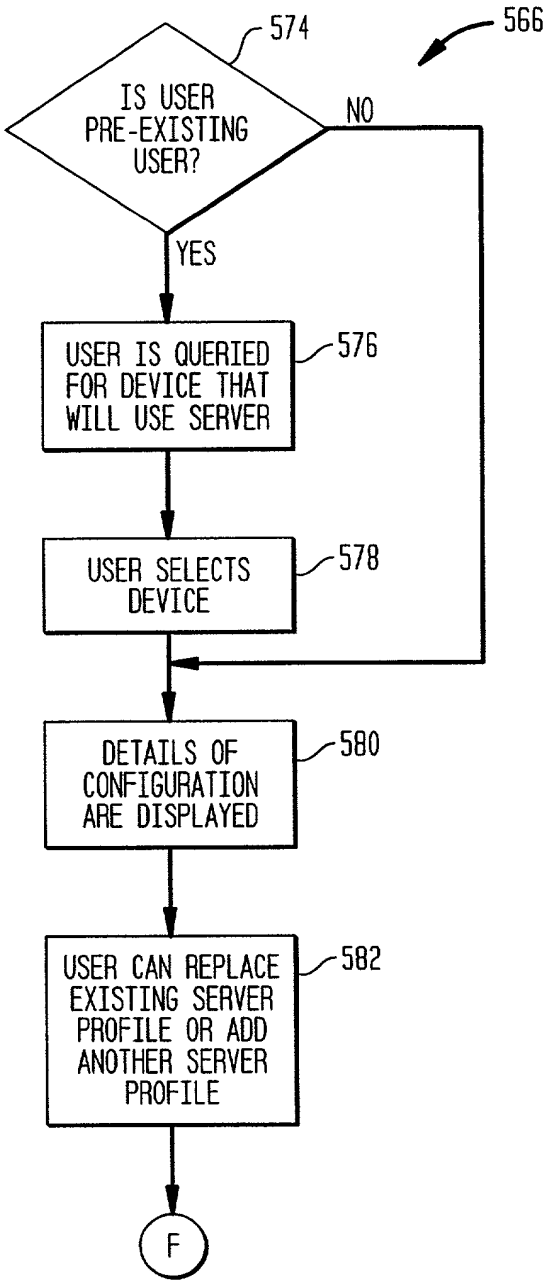

566
574
IS USER PRE-EXISTING USER?
NO
YES
USER IS QUERIED FOR DEVICE THAT WILL USE SERVER
576
USER SELECTS DEVICE
578
DETAILS OF CONFIGURATION ARE DISPLAYED
580
USER CAN REPLACE EXISTING SERVER PROFILE OR ADD ANOTHER SERVER PROFILE
582
F

FIG. 5G

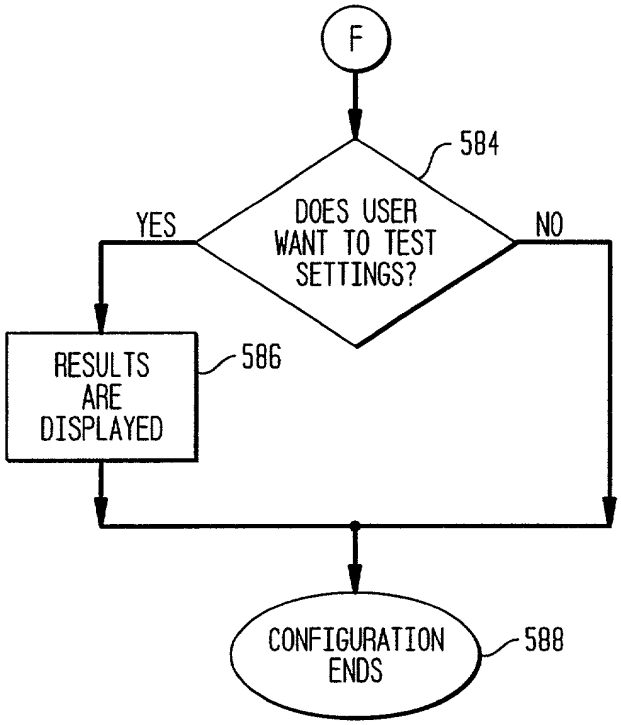

F
584
DOES USER WANT TO TEST SETTINGS?
YES
NO
RESULTS ARE DISPLAYED
586
CONFIGURATION ENDS
588

FIG. 5H

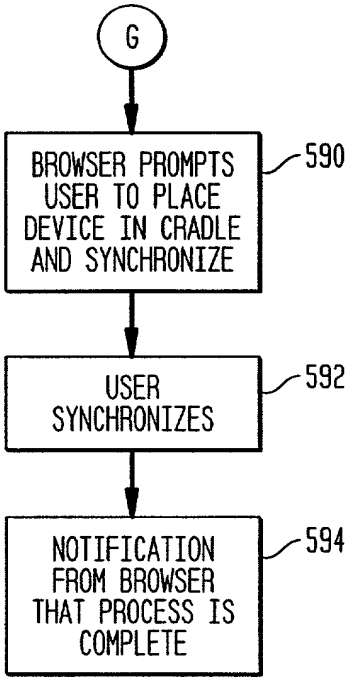

G
BROWSER PROMPTS USER TO PLACE DEVICE IN CRADLE AND SYNCHRONIZE
590
USER SYNCHRONIZES
592
NOTIFICATION FROM BROWSER THAT PROCESS IS COMPLETE
594

FIG. 5I

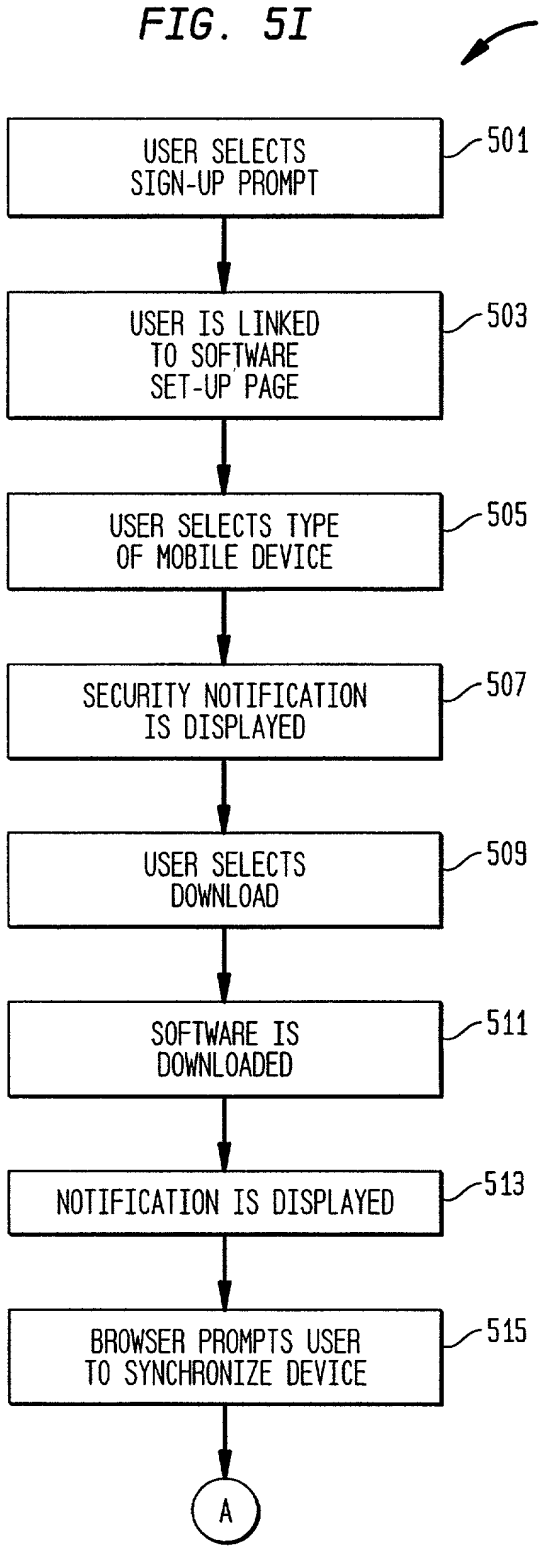

506
USER SELECTS SIGN-UP PROMPT
501
USER IS LINKED TO SOFTWARE SET-UP PAGE
503
USER SELECTS TYPE OF MOBILE DEVICE
505
SECURITY NOTIFICATION IS DISPLAYED
507
USER SELECTS DOWNLOAD
509
SOFTWARE IS DOWNLOADED
511
NOTIFICATION IS DISPLAYED
513
BROWSER PROMPTS USER TO SYNCHRONIZE DEVICE
515
A

FIG. 5J

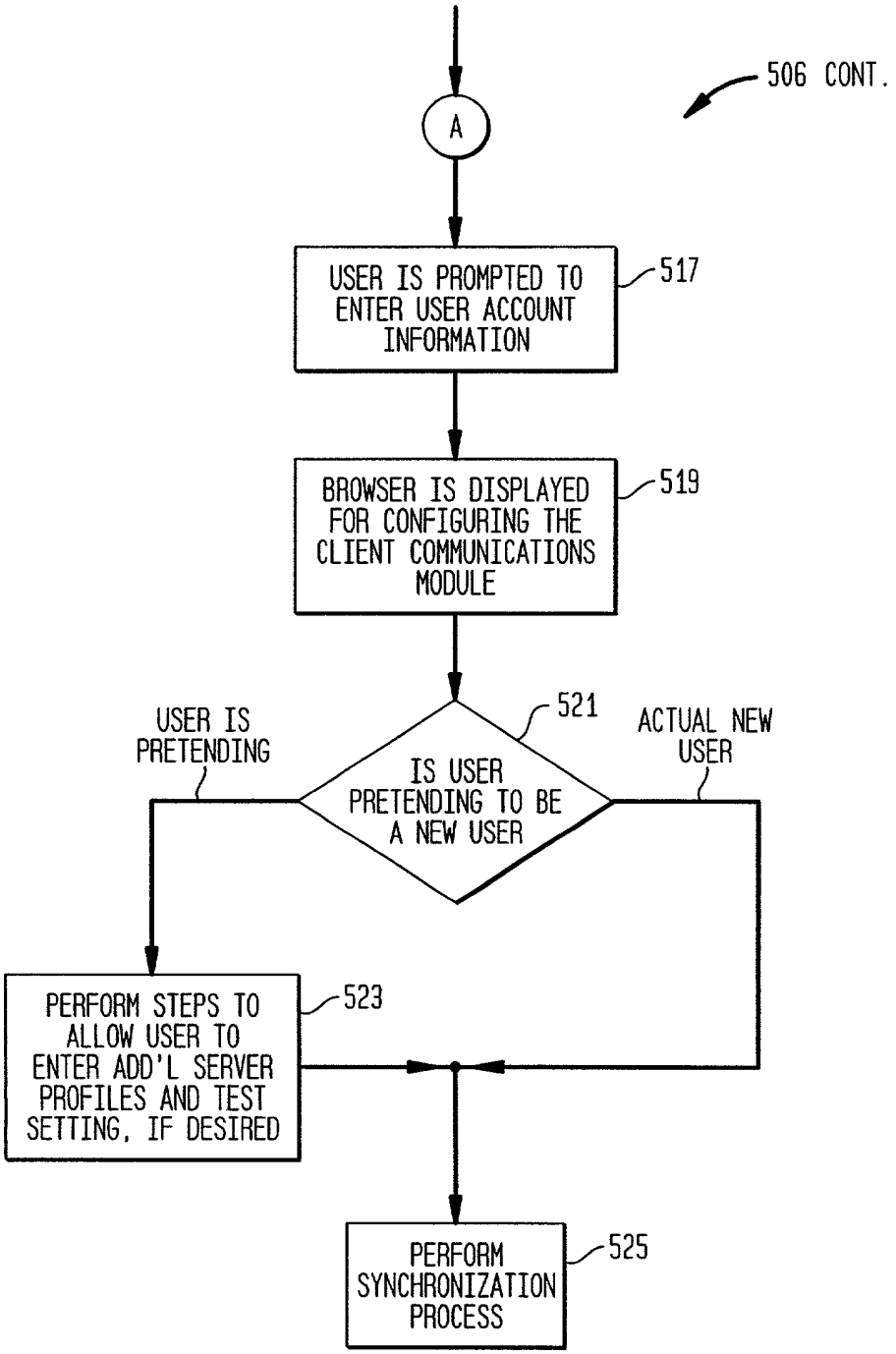

506 CONT.
A
USER IS PROMPTED TO ENTER USER ACCOUNT INFORMATION
517
BROWSER IS DISPLAYED FOR CONFIGURING THE CLIENT COMMUNICATIONS MODULE
519
521
USER IS PRETENDING
IS USER PRETENDING TO BE A NEW USER
ACTUAL NEW USER
PERFORM STEPS TO ALLOW USER TO ENTER ADD'L SERVER PROFILES AND TEST SETTING, IF DESIRED
523
PERFORM SYNCHRONIZATION PROCESS
525

FIG. 5K

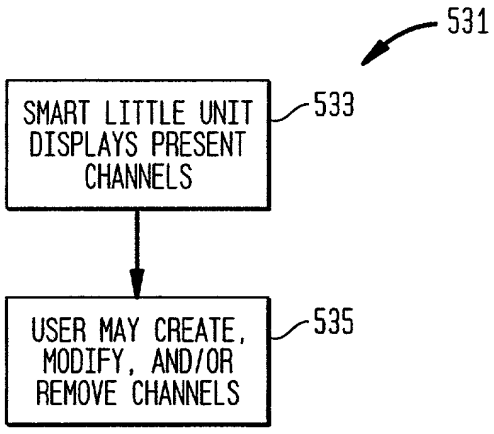

531
SMART LITTLE UNIT DISPLAYS PRESENT CHANNELS
533
USER MAY CREATE, MODIFY, AND/OR REMOVE CHANNELS
535

FIG. 5L

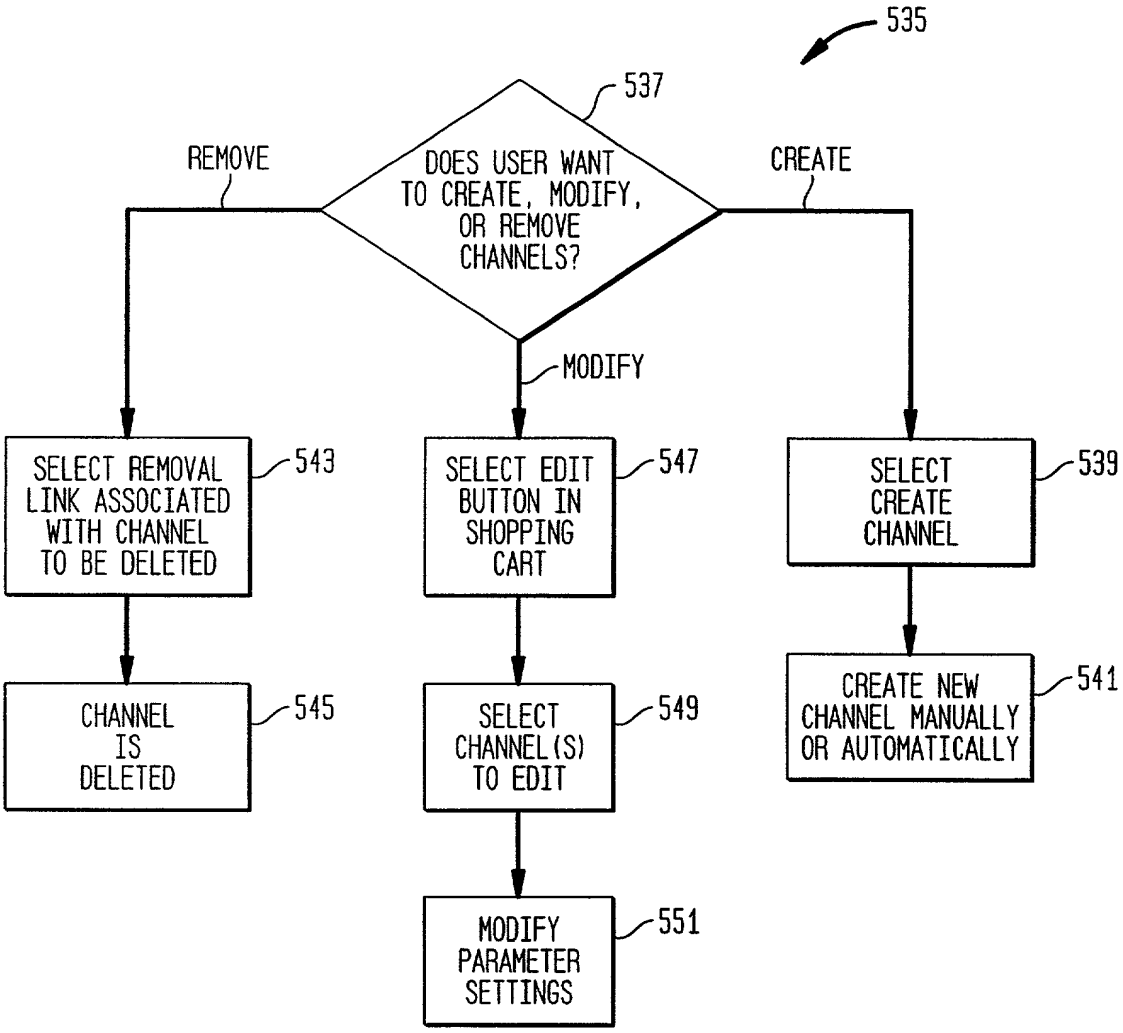

535
537
DOES USER WANT TO CREATE, MODIFY, OR REMOVE CHANNELS?
REMOVE
MODIFY
CREATE
SELECT REMOVAL LINK ASSOCIATED WITH CHANNEL TO BE DELETED
543
CHANNEL IS DELETED
545
SELECT EDIT BUTTON IN SHOPPING CART
547
SELECT CHANNEL(S) TO EDIT
549
MODIFY PARAMETER SETTINGS
551
SELECT CREATE CHANNEL
539
CREATE NEW CHANNEL MANUALLY OR AUTOMATICALLY
541

FIG. 5M

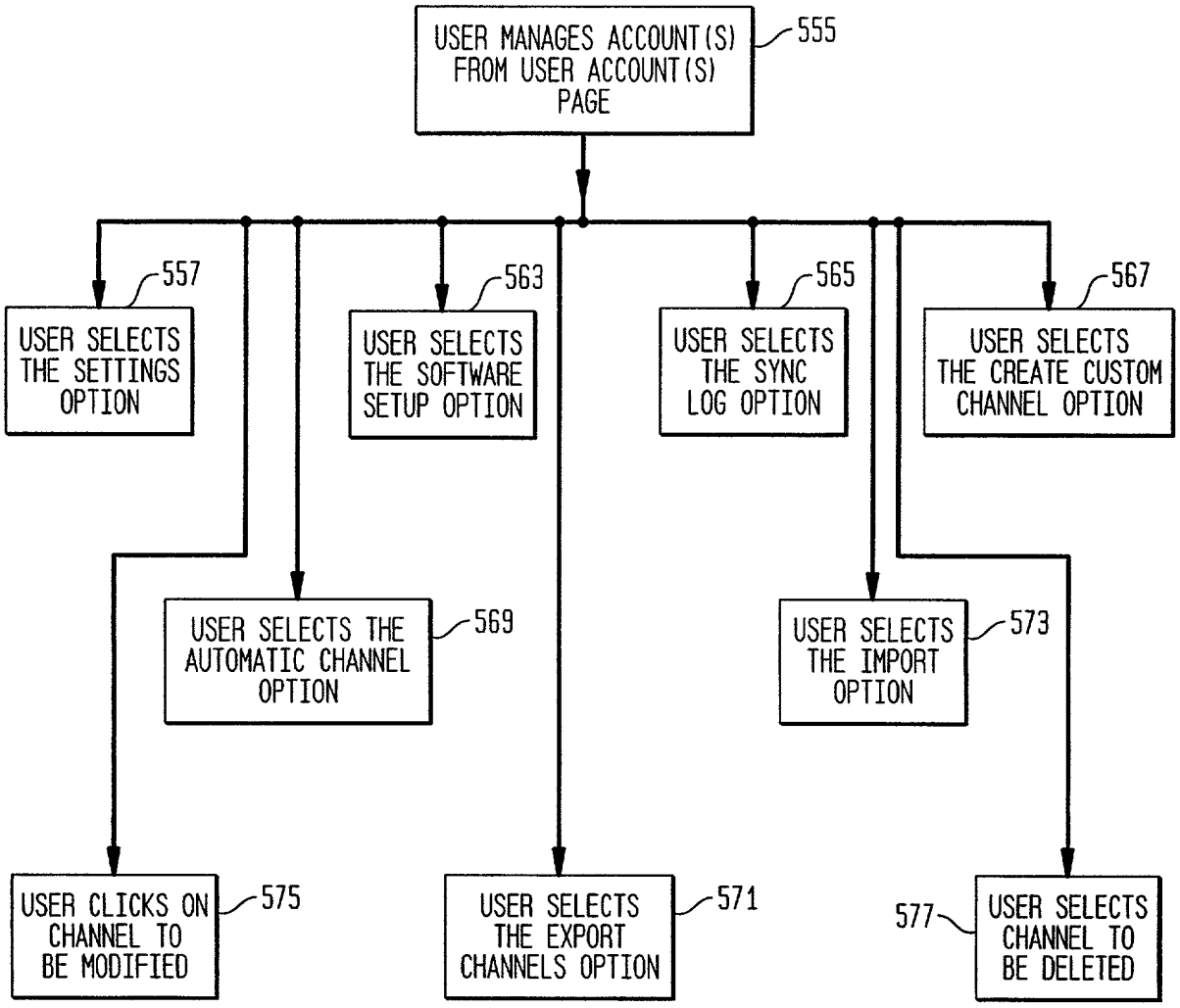
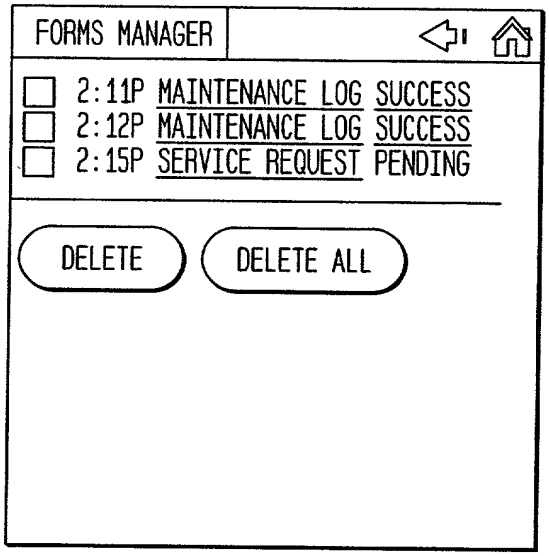

USER MANAGES ACCOUNT(S) FROM USER ACCOUNT(S) PAGE
555
557
USER SELECTS THE SETTINGS OPTION
563
USER SELECTS THE SOFTWARE SETUP OPTION
565
USER SELECTS THE SYNC LOG OPTION
567
USER SELECTS THE CREATE CUSTOM CHANNEL OPTION
569
USER SELECTS THE AUTOMATIC CHANNEL OPTION
573
USER SELECTS THE IMPORT OPTION
575
USER CLICKS ON CHANNEL TO BE MODIFIED
571
USER SELECTS THE EXPORT CHANNELS OPTION
577
USER SELECTS CHANNEL TO BE DELETED

FIG. 6



PCT/US2005/035959

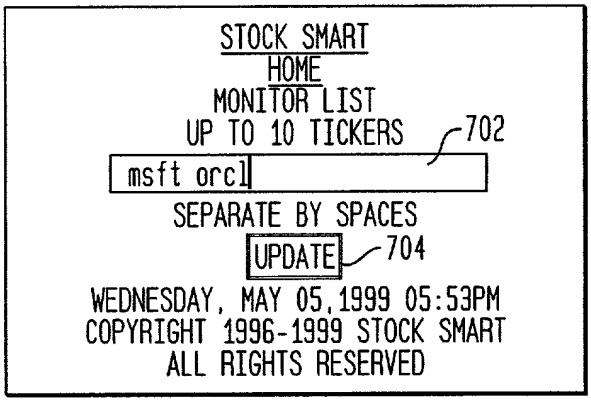


FIG. 7

FIG. 8

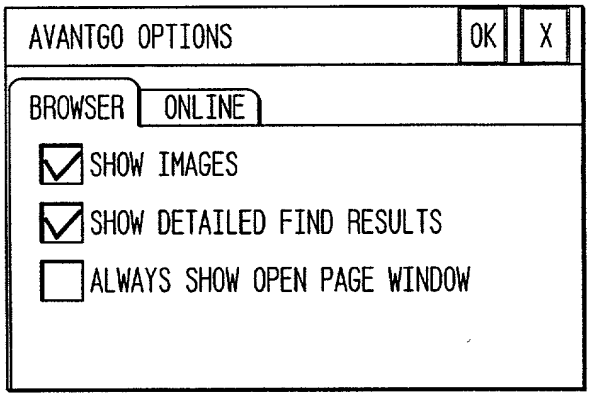


FIG. 9

FIG. 10

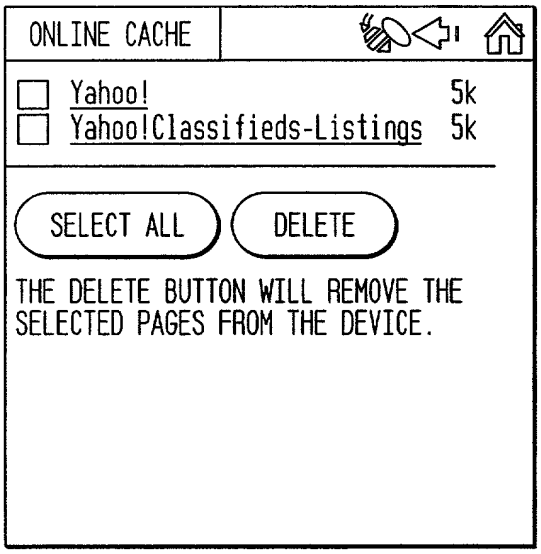

ONLINE CACHE
Yahoo! 5k
Yahoo!Classifieds-Listings 5k
SELECT ALL
DELETE
THE DELETE BUTTON WILL REMOVE THE SELECTED PAGES FROM THE DEVICE.

FIG. 11

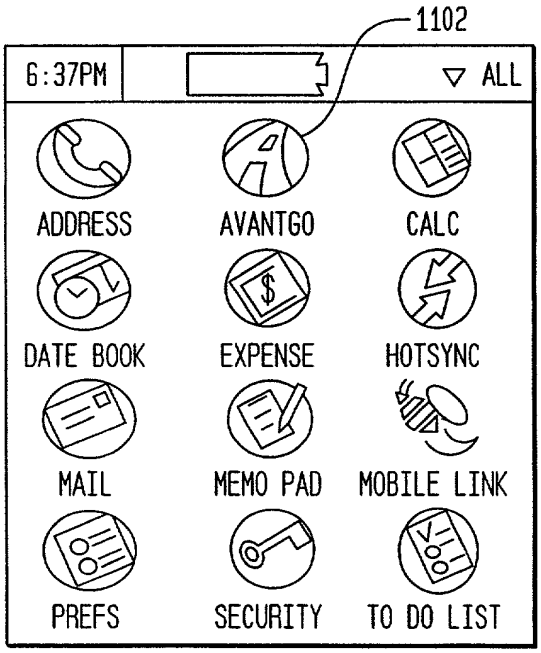

1102
6:37PM
ALL
ADDRESS
AVANTGO
CALC
DATE BOOK
EXPENSE
HOTSYNC
MAIL
MEMO PAD
MOBILE LINK
PREFS
SECURITY
TO DO LIST

FIG. 12

FIG. 13

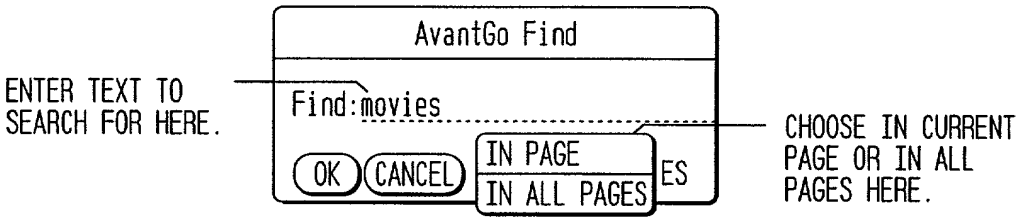


FIG. 14

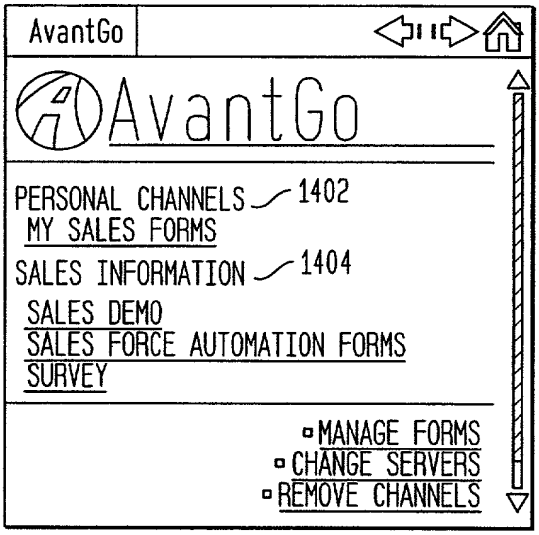


FIG. 15

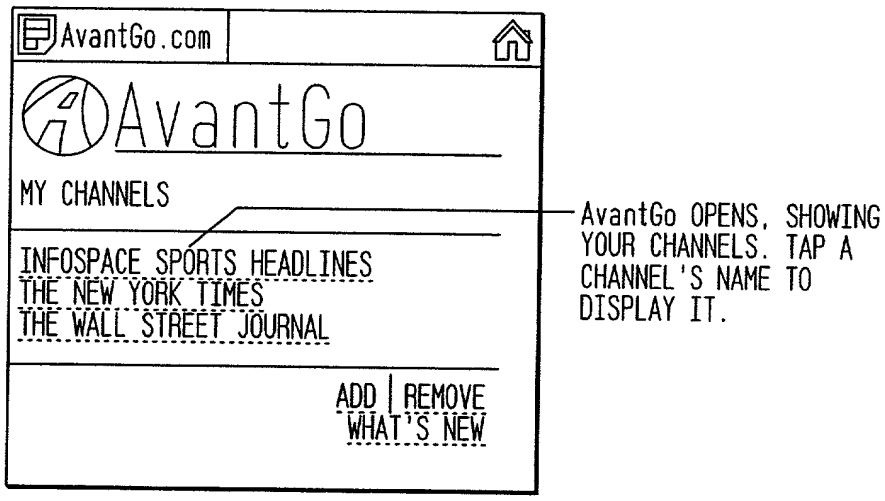


FIG. 16

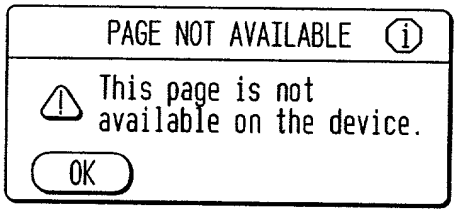
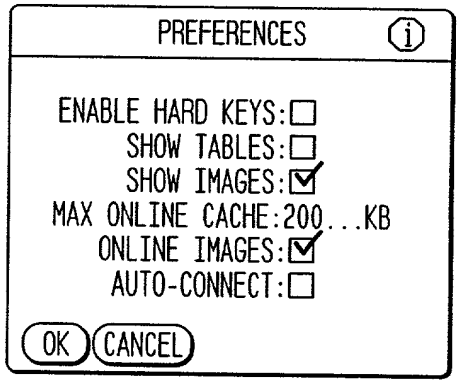


FIG. 17



Attorney Docket No. 25455/5650

FIG. 18

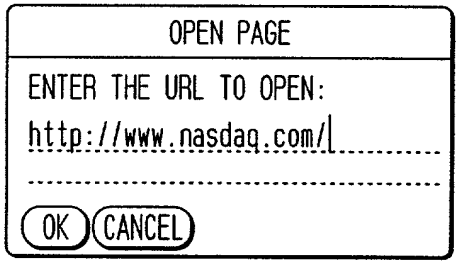


FIG. 19

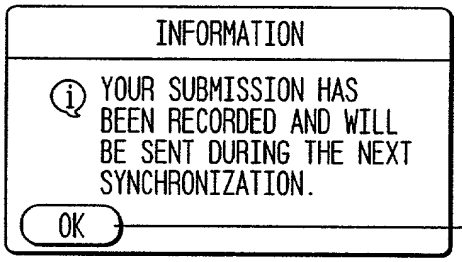


FIG. 20

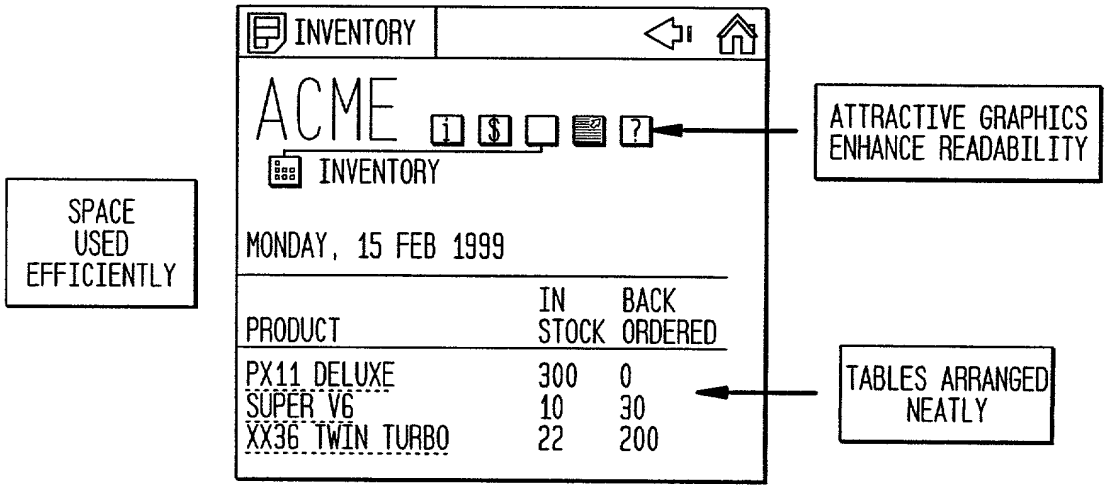


FIG. 21

INCREASE FONT

FIG. 22

DECREASE FONT

FIG. 23

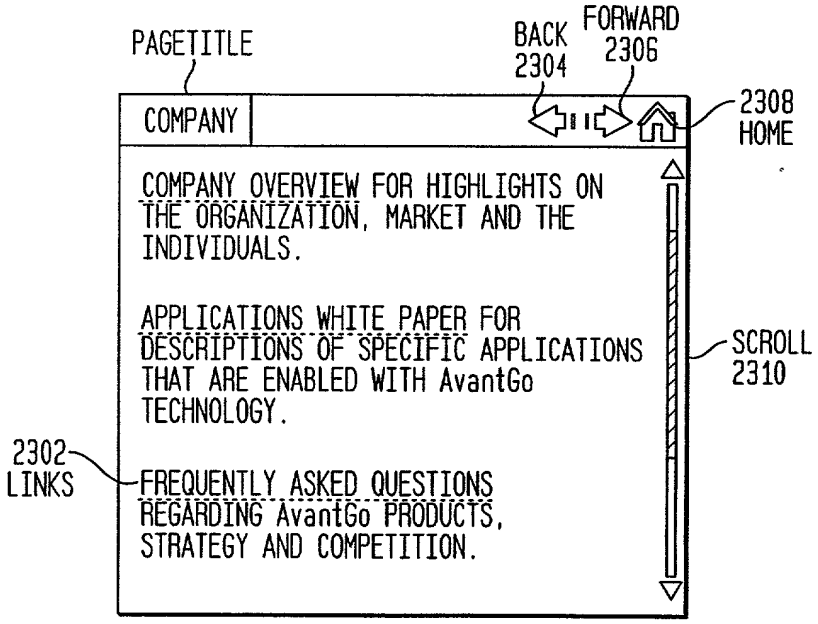


FIG. 24

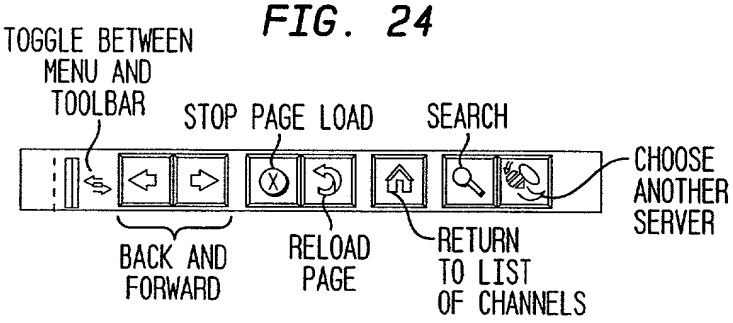


FIG. 25

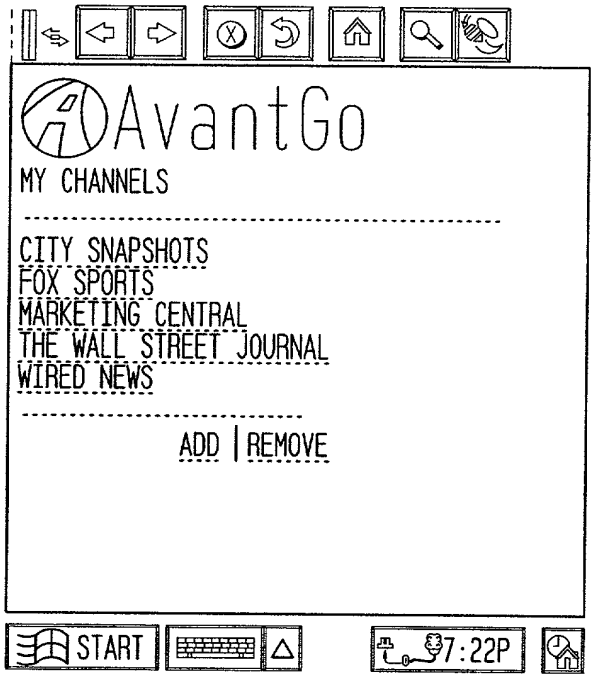

AvantGo
MY CHANNELS
CITY SNAPSHOTS
FOX SPORTS
MARKETING CENTRAL
THE WALL STREET JOURNAL
WIRED NEWS
ADD | REMOVE
START
7:22P

FIG. 26

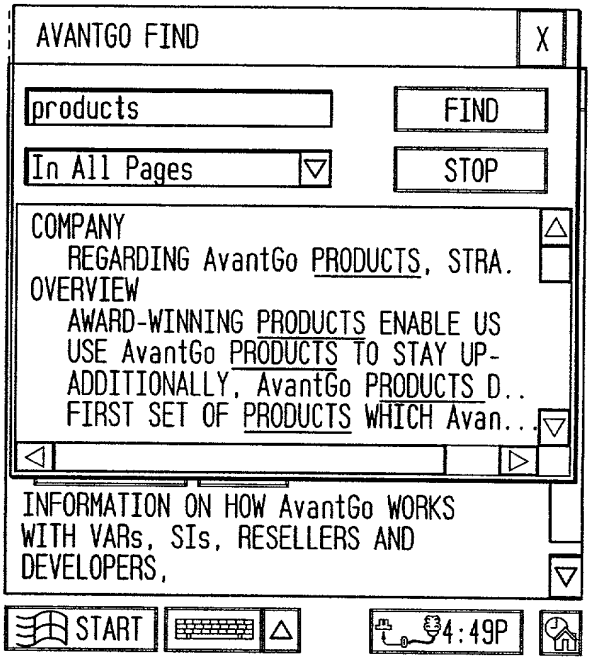

AVANTGO FIND
X
products
FIND
In All Pages
STOP
COMPANY
REGARDING AvantGo PRODUCTS, STRA.
OVERVIEW
AWARD-WINNING PRODUCTS ENABLE US
USE AvantGo PRODUCTS TO STAY UP-
ADDITIONALLY, AvantGo PRODUCTS D..
FIRST SET OF PRODUCTS WHICH Avan...
INFORMATION ON HOW AvantGo WORKS WITH VARs, SIs, RESELLERS AND DEVELOPERS,
START
4:49P

FIG. 27

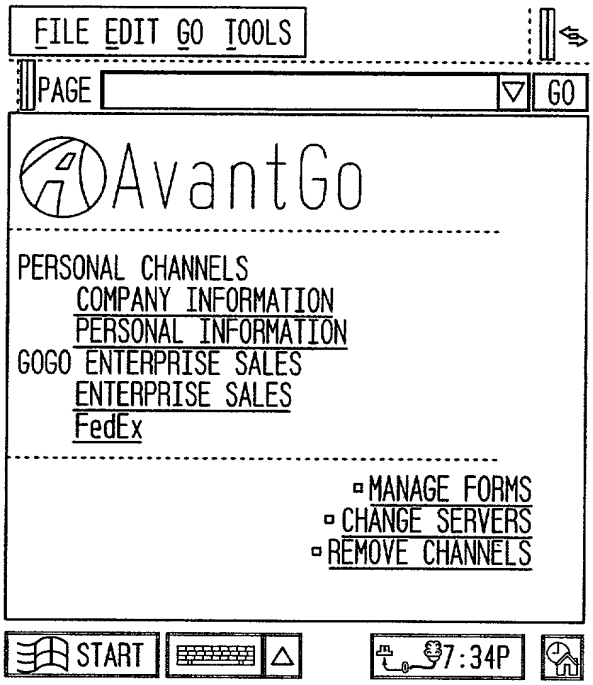

FILE EDIT GO TOOLS
PAGE
GO
AvantGo
PERSONAL CHANNELS
COMPANY INFORMATION
PERSONAL INFORMATION
GOGO ENTERPRISE SALES
ENTERPRISE SALES
FedEx
MANAGE FORMS
CHANGE SERVERS
REMOVE CHANNELS
START
7:34P

FIG. 28

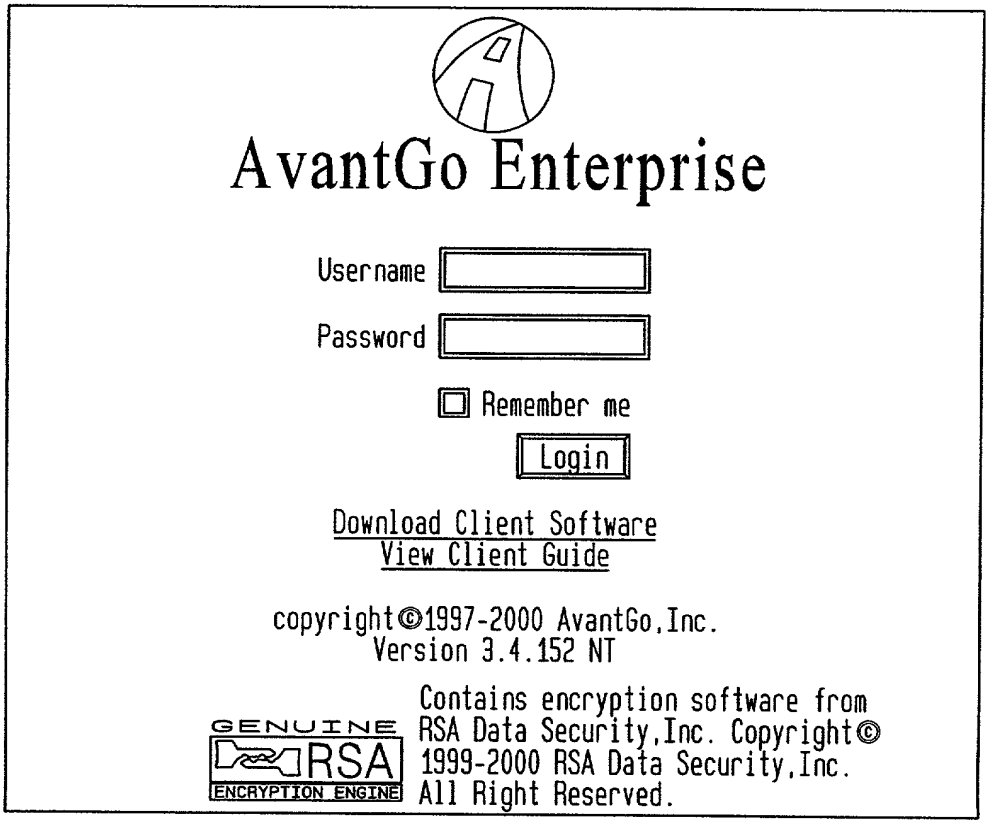

AvantGo Enterprise
Username
Password
Remember me
Login
Download Client Software
View Client Guide
copyright©1997-2000 AvantGo,Inc.
Version 3.4.152 NT
GENUINE
RSA
ENCRYPTION ENGINE
Contains encryption software from
RSA Data Security,Inc. Copyright©
1999-2000 RSA Data Security,Inc.
All Right Reserved.

FIG. 29

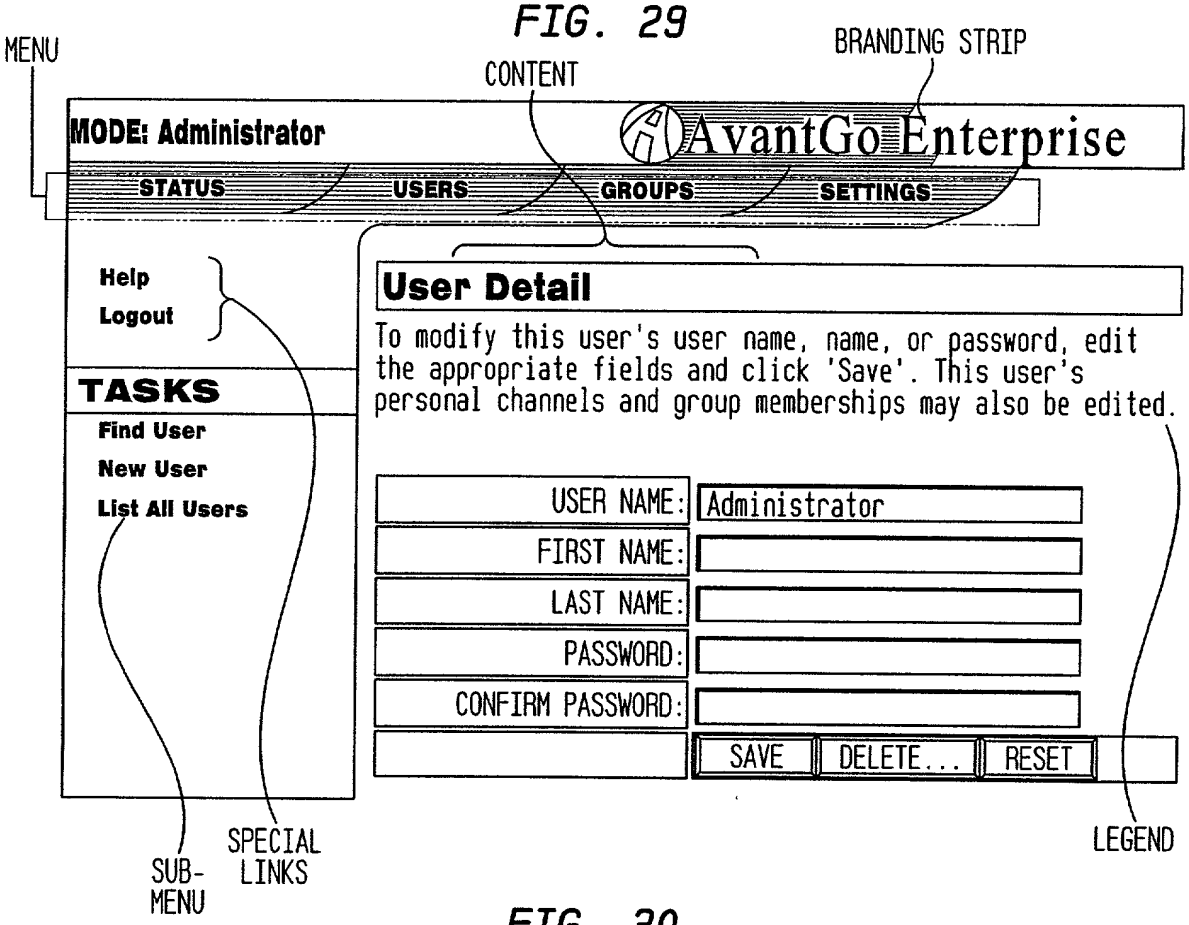

MENU
CONTENT
BRANDING STRIP
MODE: Administrator
AvantGo Enterprise
STATUS
USERS
GROUPS
SETTINGS
Help
Logout
TASKS
Find User
New User
List All Users
User Detail
To modify this user's user name, name, or password, edit the appropriate fields and click 'Save'. This user's personal channels and group memberships may also be edited.
USER NAME:
Administrator
FIRST NAME:
LAST NAME:
PASSWORD:
CONFIRM PASSWORD:
SAVE
DELETE...
RESET
SUB-MENU
SPECIAL LINKS
LEGEND

FIG. 30

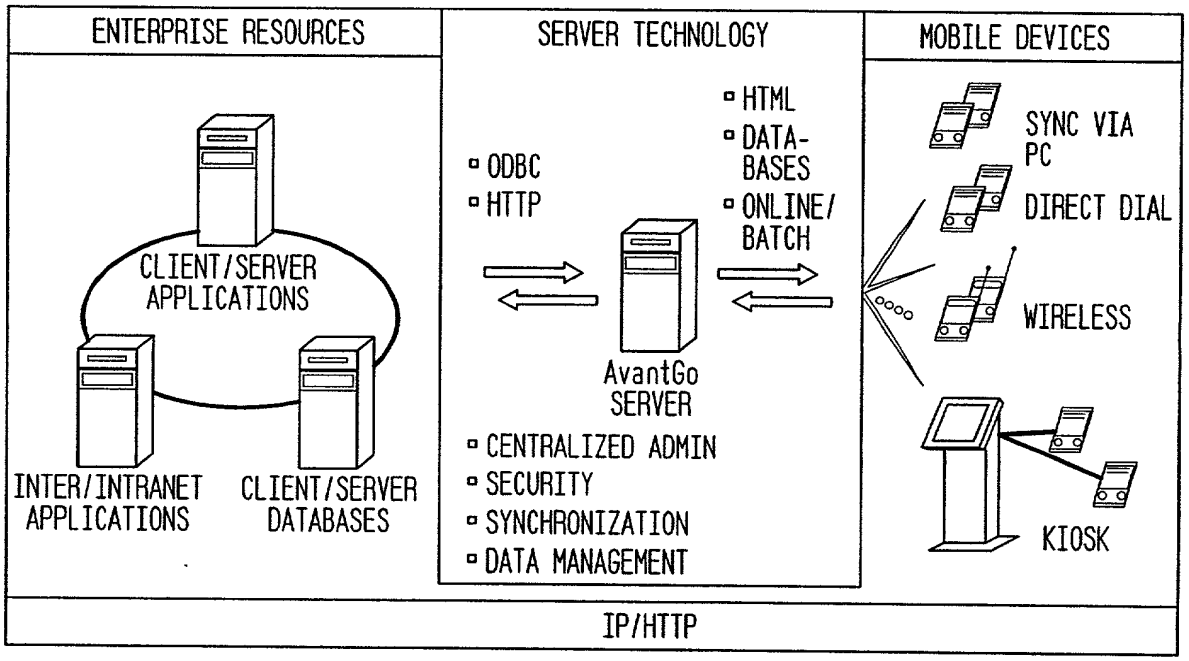

ENTERPRISE RESOURCES
SERVER TECHNOLOGY
MOBILE DEVICES
CLIENT/SERVER APPLICATIONS
INTER/INTRANET APPLICATIONS
CLIENT/SERVER DATABASES
ODBC
HTTP
HTML
DATA-BASES
ONLINE/ BATCH
AvantGo SERVER
CENTRALIZED ADMIN
SECURITY
SYNCHRONIZATION
DATA MANAGEMENT
SYNC VIA PC
DIRECT DIAL
WIRELESS
KIOSK
IP/HTTP

FIG. 31

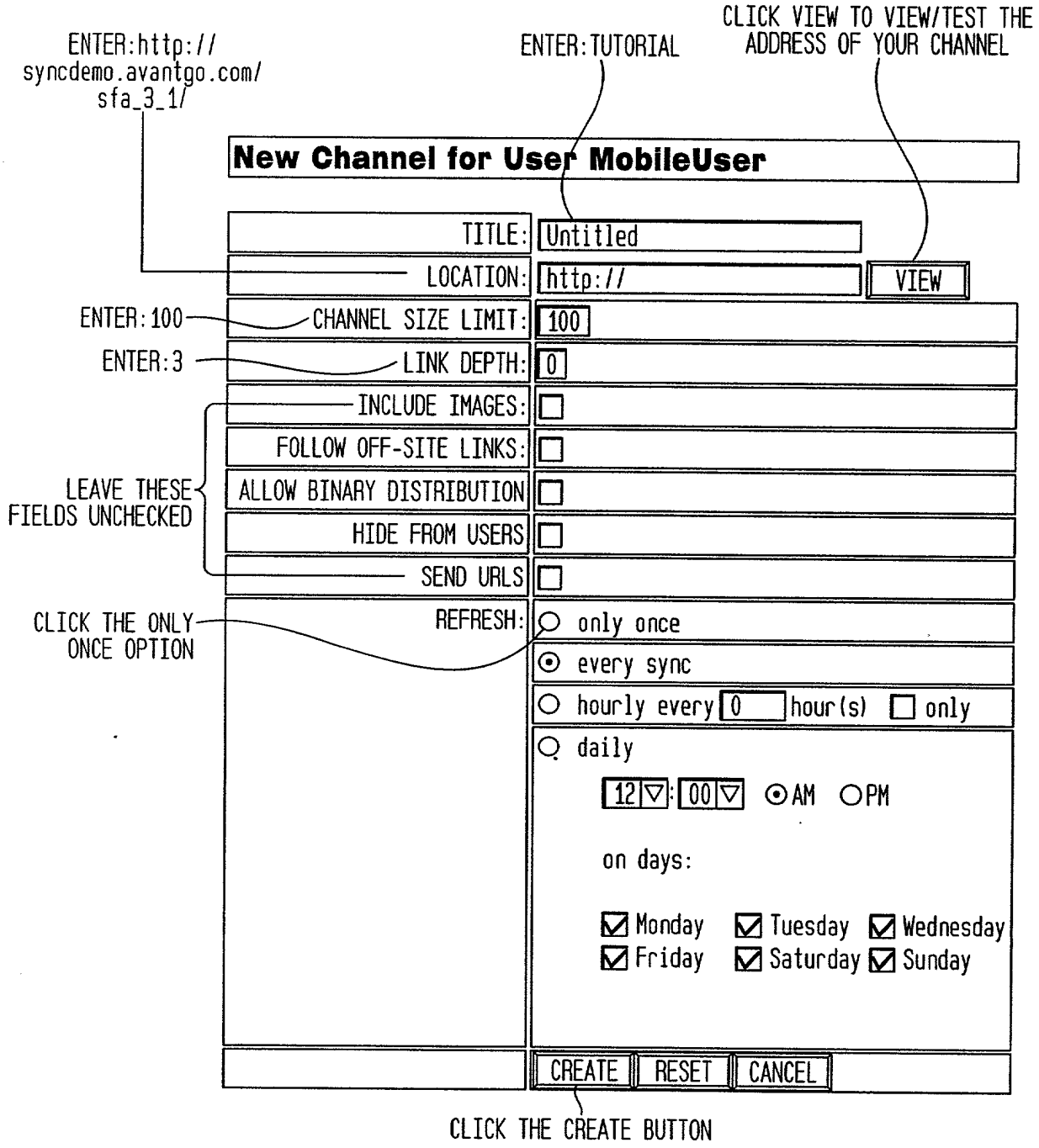

ENTER:http://
syncdemo.avantgo.com/
sfa_3_1/
ENTER:TUTORIAL
CLICK VIEW TO VIEW/TEST THE
ADDRESS OF YOUR CHANNEL
New Channel for User MobileUser
TITLE:
Untitled
LOCATION:
http://
VIEW
ENTER:100
CHANNEL SIZE LIMIT:
100
ENTER:3
LINK DEPTH:
0
INCLUDE IMAGES:
FOLLOW OFF-SITE LINKS:
LEAVE THESE
FIELDS UNCHECKED
ALLOW BINARY DISTRIBUTION
HIDE FROM USERS
SEND URLS
CLICK THE ONLY
ONCE OPTION
REFRESH:
only once
every sync
hourly every
0
hour(s)
only
daily
12
00
AM
PM
on days:
Monday
Tuesday
Wednesday
Friday
Saturday
Sunday
CREATE
RESET
CANCEL
CLICK THE CREATE BUTTON

FIG. 32

Refresh:

- (•) on every sync
- ( ) every [0] hour(s)
- ( ) only once
- ( ) daily at [12]:[00] [AM] on following days:
  - [x] Monday [x] Tuesday [x] Wednesday [x] Thursday
  - [x] Friday [x] Saturday [x] Sunday

When finished, click the "Save Channel" button: [Save Channel]

FIG. 33

Update User Membership for Group Travel Itinerary

Manage this group's user memberships by selecting/deselecting the user check boxes and clicking update. To view information about a particular user, click the hyperlink name of the user.

USER NAME:	
FIRST NAME:	
LAST NAME:	
	[FIND USER]

Search Results

	USER NAME:	NAME:
[ ]	Joja	John Jack
[x]	Natalie	Natalie Doe
[ ]	new	new test

[Update] [Reset] [Return to Group]

FIG. 34

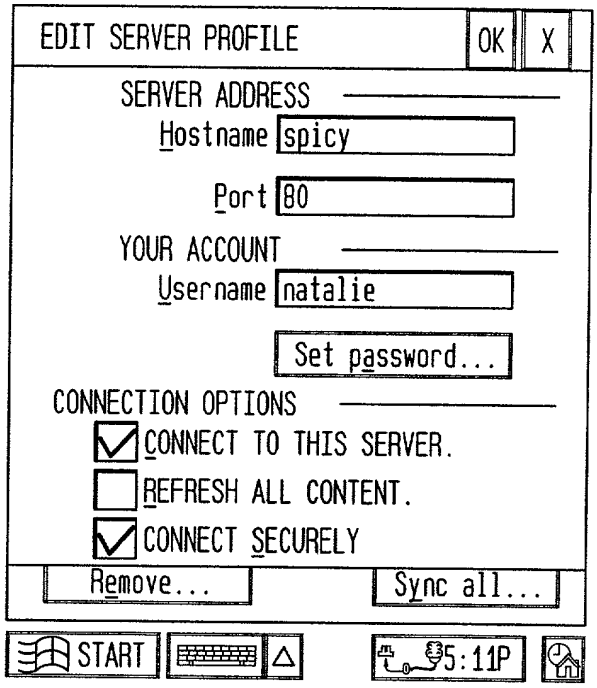

EDIT SERVER PROFILE
OK
X
SERVER ADDRESS
Hostname
spicy
Port
80
YOUR ACCOUNT
Username
natalie
Set password...
CONNECTION OPTIONS
CONNECT TO THIS SERVER.
REFRESH ALL CONTENT.
CONNECT SECURELY
Remove...
Sync all...
START
5:11P

FIG. 35

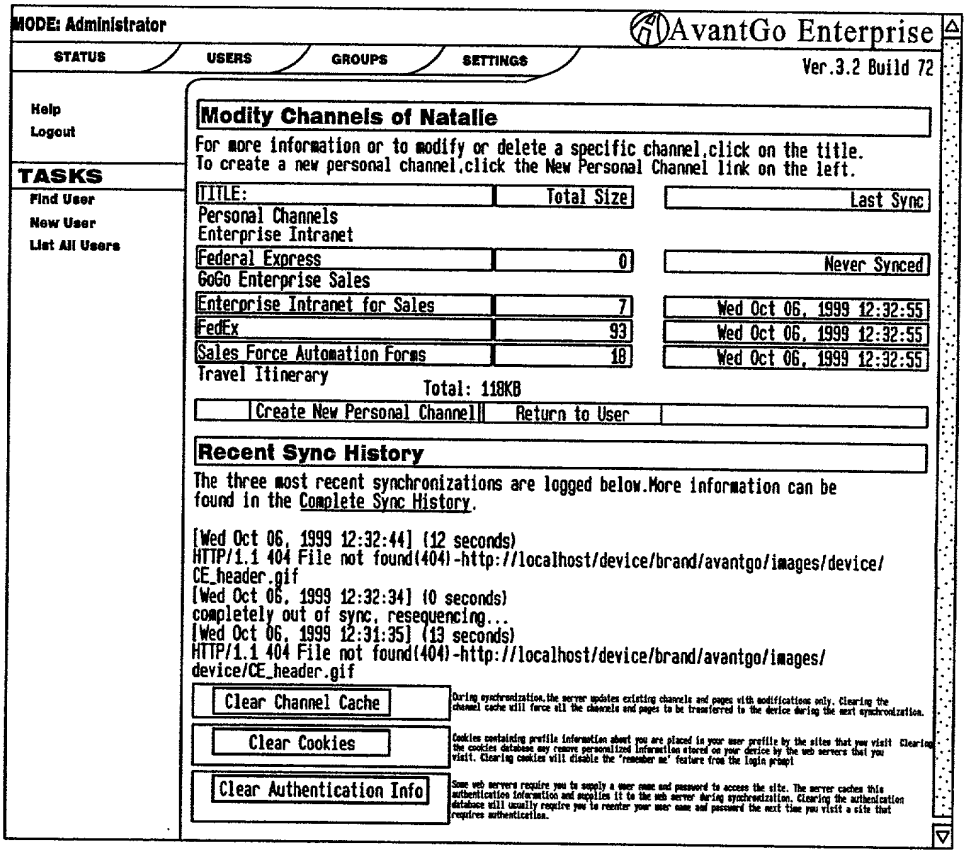

MODE: Administrator
AvantGo Enterprise
STATUS
USERS
GROUPS
SETTINGS
Ver.3.2 Build 72
Help
Logout
TASKS
Find User
New User
List All Users
Modify Channels of Natalie
For more information or to modify or delete a specific channel,click on the title.
To create a new personal channel,click the New Personal Channel link on the left.
TITLE:
Total Size
Last Sync
Personal Channels
Enterprise Intranet
Federal Express
0
Never Synced
GoGo Enterprise Sales
Enterprise Intranet for Sales
7
Wed Oct 06, 1999 12:32:55
FedEx
93
Wed Oct 06, 1999 12:32:55
Sales Force Automation Forms
18
Wed Oct 06, 1999 12:32:55
Travel Itinerary
Total: 118KB
Create New Personal Channel
Return to User
Recent Sync History
The three most recent synchronizations are logged below.More information can be found in the Complete Sync History.
[Wed Oct 06, 1999 12:32:44] (12 seconds)
HTTP/1.1 404 File not found(404)-http://localhost/device/brand/avantgo/images/device/CE_header.gif
[Wed Oct 06, 1999 12:32:34] (0 seconds)
completely out of sync, resequencing...
[Wed Oct 06, 1999 12:31:35] (13 seconds)
HTTP/1.1 404 File not found(404)-http://localhost/device/brand/avantgo/images/device/CE_header.gif
Clear Channel Cache
Clear Cookies
Clear Authentication Info

FIG. 36

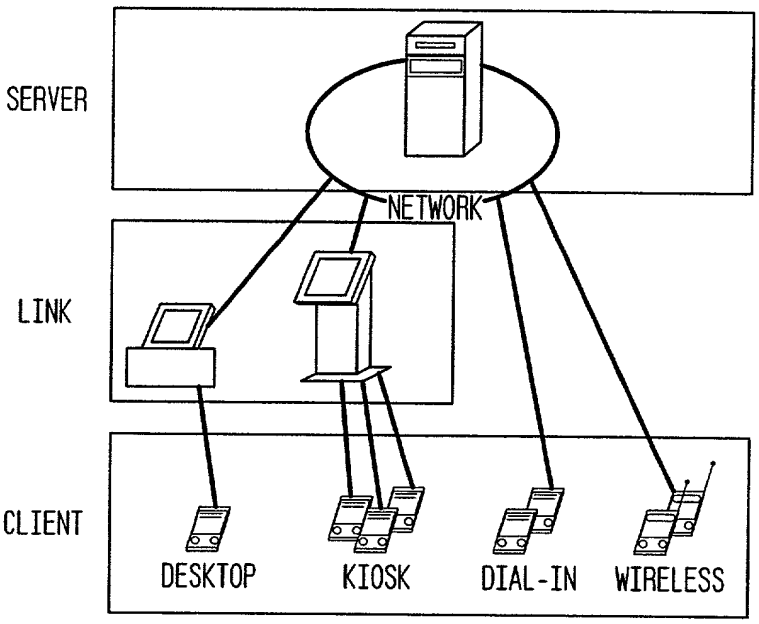

SERVER
NETWORK
LINK
CLIENT
DESKTOP
KIOSK
DIAL-IN
WIRELESS

FIG. 37

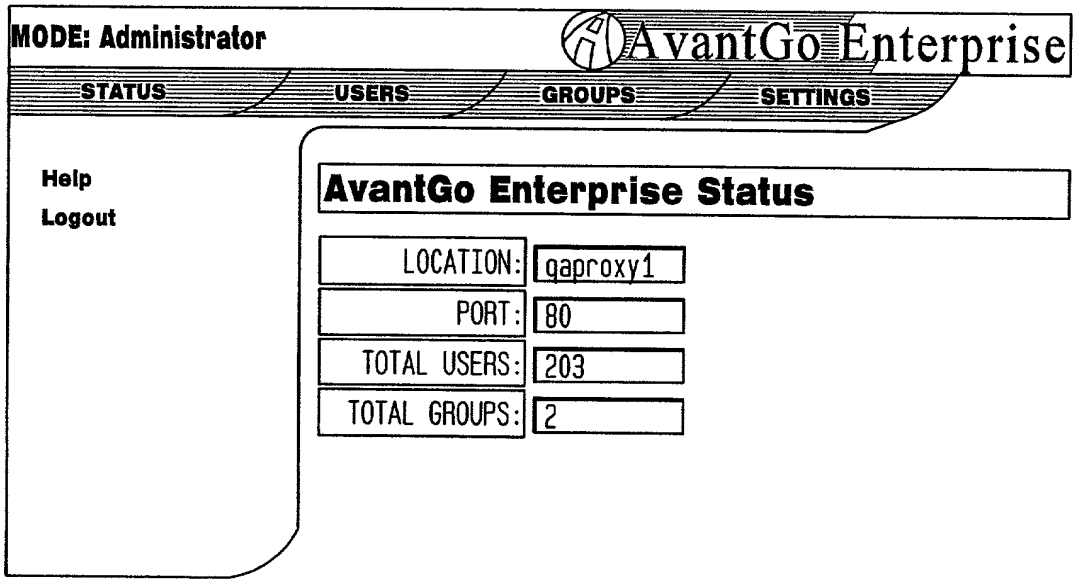

MODE: Administrator
AvantGo Enterprise
STATUS
USERS
GROUPS
SETTINGS
Help
Logout
AvantGo Enterprise Status
LOCATION: qaproxy1
PORT: 80
TOTAL USERS: 203
TOTAL GROUPS: 2

FIG. 38

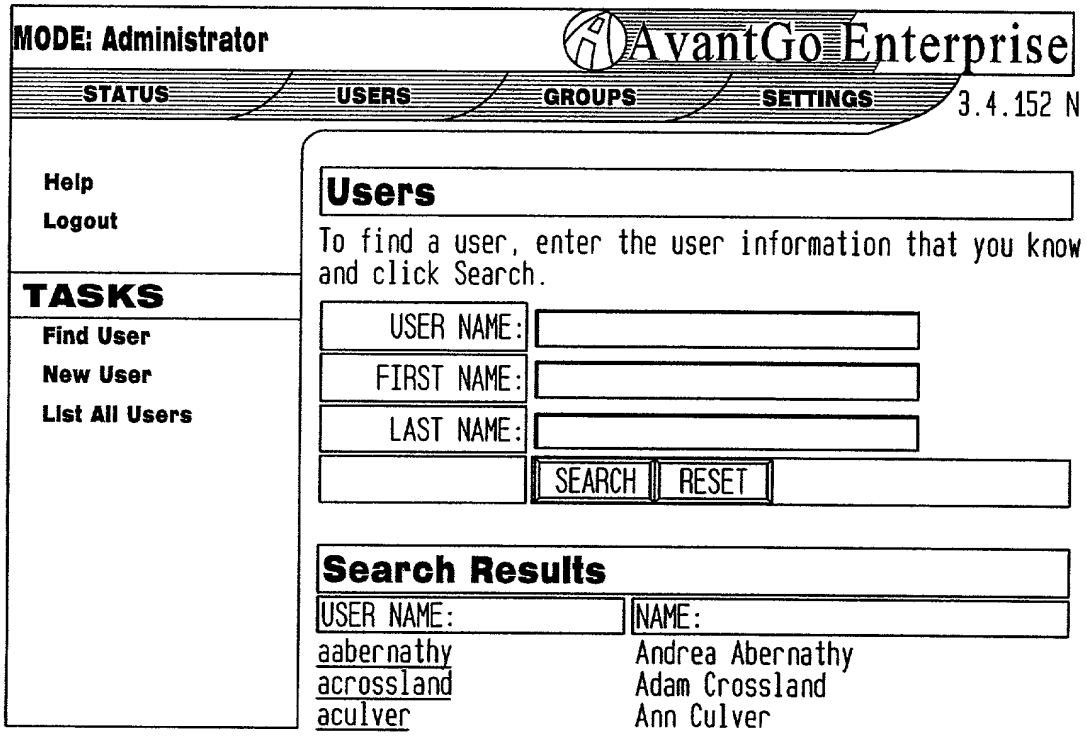

MODE: Administrator
AvantGo Enterprise
STATUS
USERS
GROUPS
SETTINGS
3.4.152 N
Help
Logout
TASKS
Find User
New User
List All Users
Users
To find a user, enter the user information that you know and click Search.
USER NAME:
FIRST NAME:
LAST NAME:
SEARCH
RESET
Search Results
USER NAME:
NAME:
aabernathy
Andrea Abernathy
acrossland
Adam Crossland
aculver
Ann Culver

FIG. 39

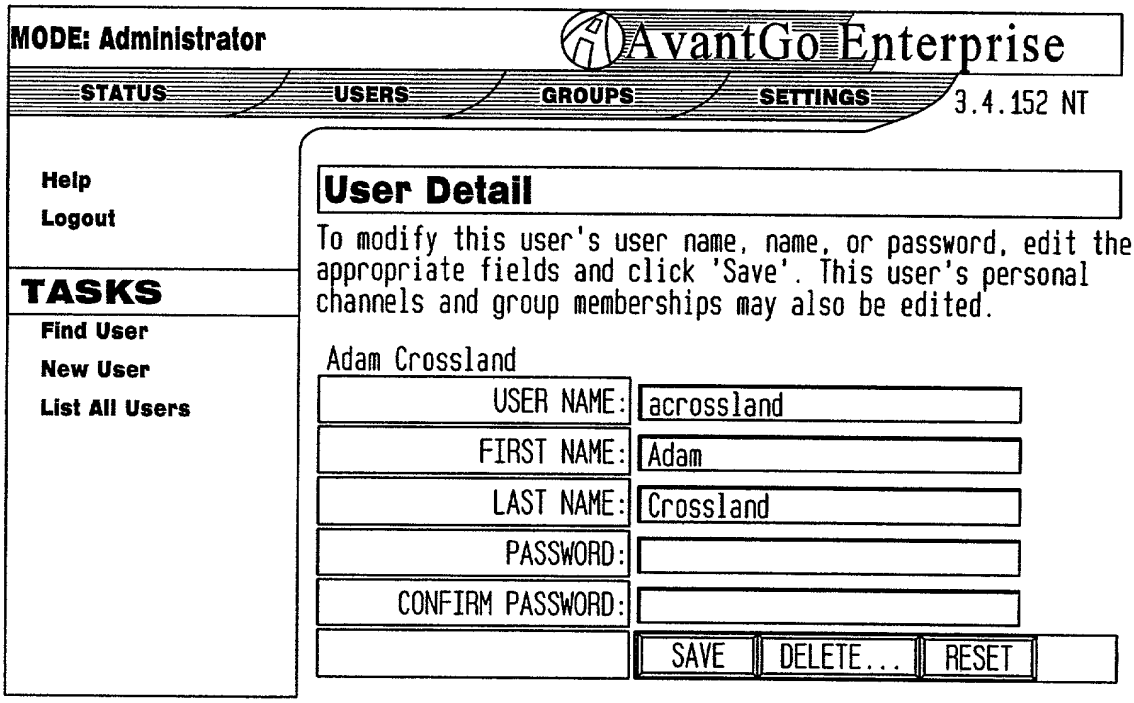

MODE: Administrator
AvantGo Enterprise
STATUS
USERS
GROUPS
SETTINGS
3.4.152 NT
Help
Logout
TASKS
Find User
New User
List All Users
User Detail
To modify this user's user name, name, or password, edit the appropriate fields and click 'Save'. This user's personal channels and group memberships may also be edited.
Adam Crossland
USER NAME:
acrossland
FIRST NAME:
Adam
LAST NAME:
Crossland
PASSWORD:
CONFIRM PASSWORD:
SAVE
DELETE...
RESET

FIG. 40

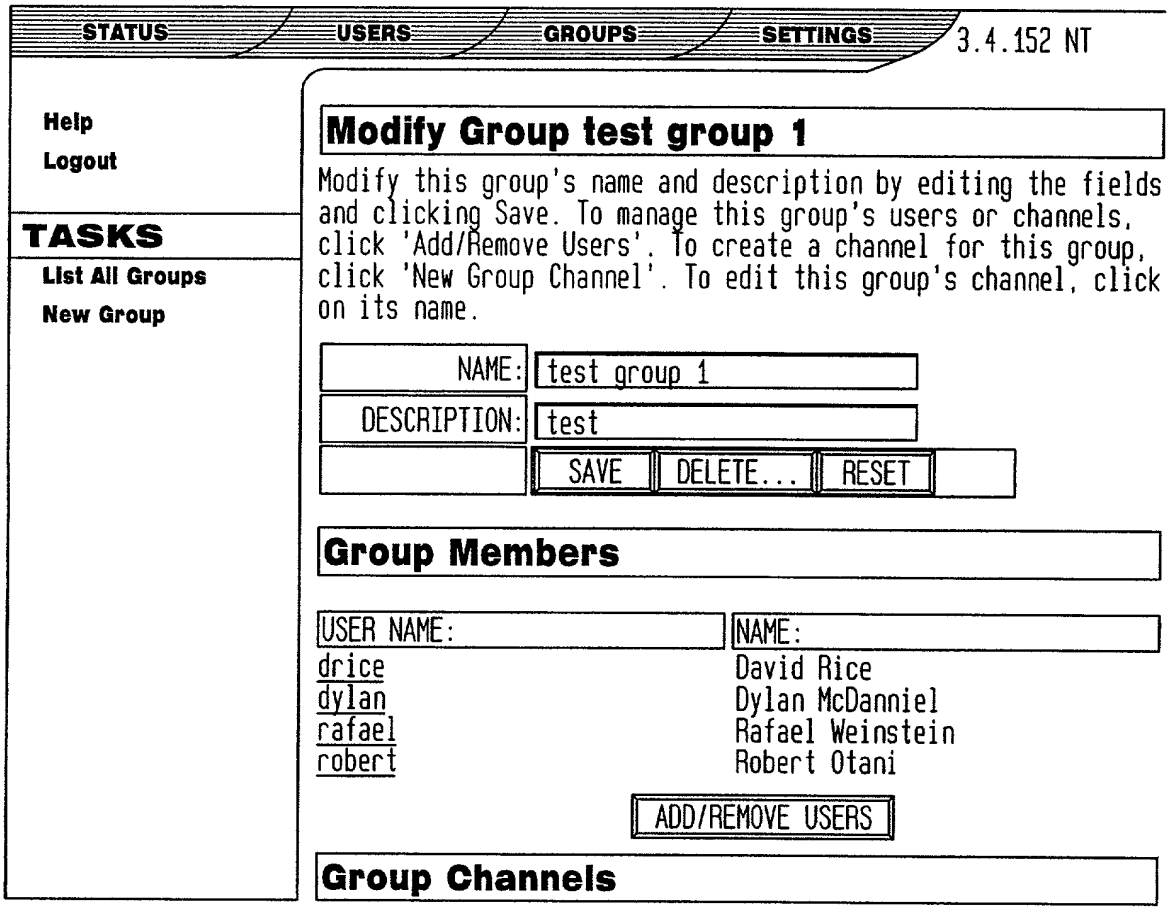

STATUS
USERS
GROUPS
SETTINGS
3.4.152 NT
Help
Logout
TASKS
List All Groups
New Group
Modify Group test group 1
Modify this group's name and description by editing the fields and clicking Save. To manage this group's users or channels, click 'Add/Remove Users'. To create a channel for this group, click 'New Group Channel'. To edit this group's channel, click on its name.
NAME:
test group 1
DESCRIPTION:
test
SAVE
DELETE...
RESET
Group Members
USER NAME:
NAME:
drice
David Rice
dylan
Dylan McDanniel
rafael
Rafael Weinstein
robert
Robert Otani
ADD/REMOVE USERS
Group Channels

FIG. 41

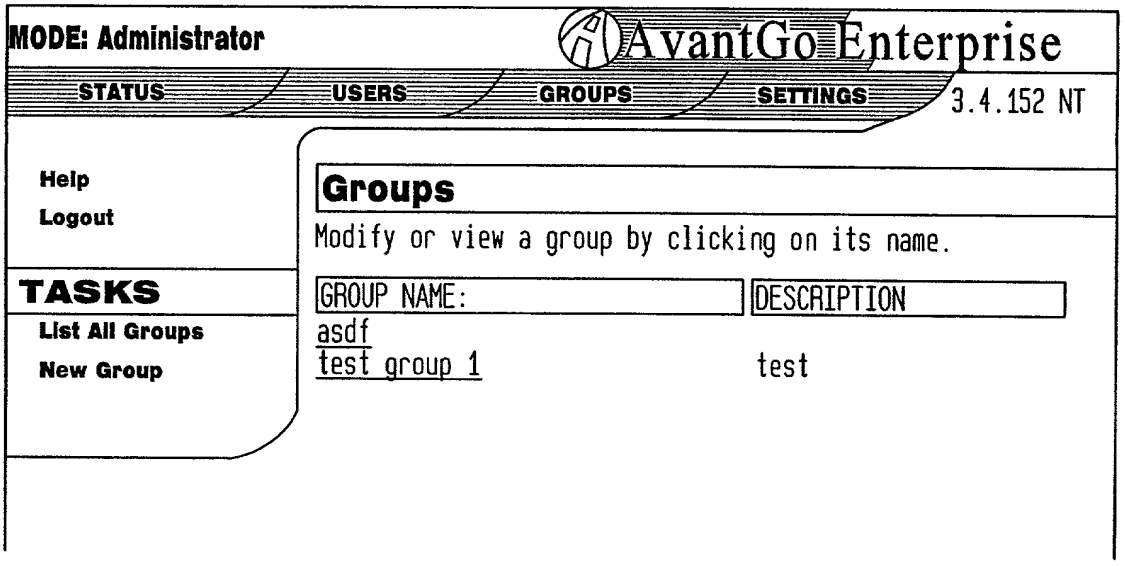

MODE: Administrator
AvantGo Enterprise
STATUS
USERS
GROUPS
SETTINGS
3.4.152 NT
Help
Logout
TASKS
List All Groups
New Group
Groups
Modify or view a group by clicking on its name.
GROUP NAME:
DESCRIPTION
asdf
test group 1
test

FIG. 42

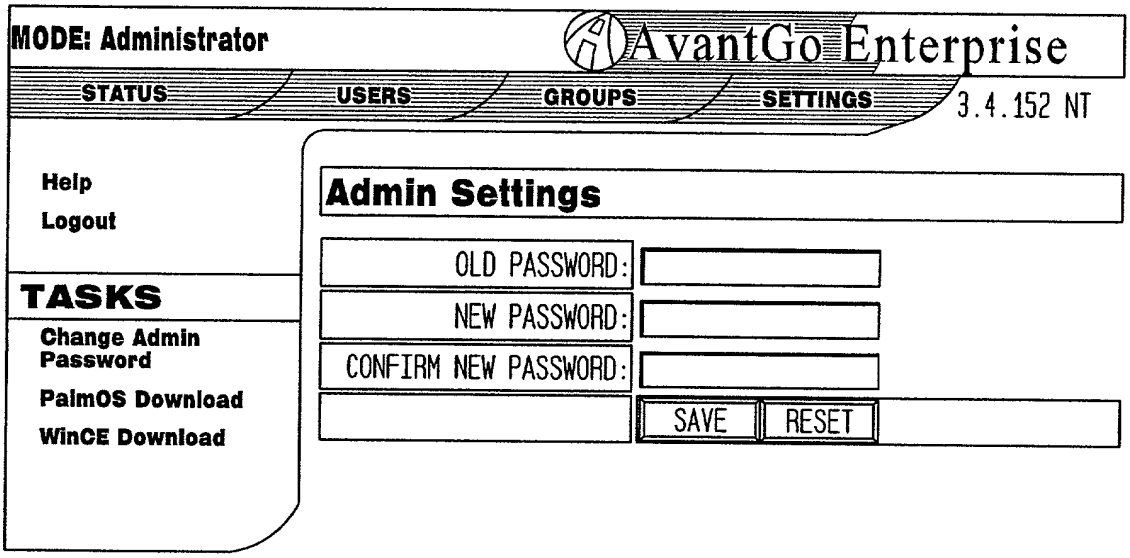

MODE: Administrator
AvantGo Enterprise
STATUS
USERS
GROUPS
SETTINGS
3.4.152 NT
Help
Logout
TASKS
Change Admin Password
PalmOS Download
WinCE Download
Admin Settings
OLD PASSWORD:
NEW PASSWORD:
CONFIRM NEW PASSWORD:
SAVE
RESET

FIG. 43

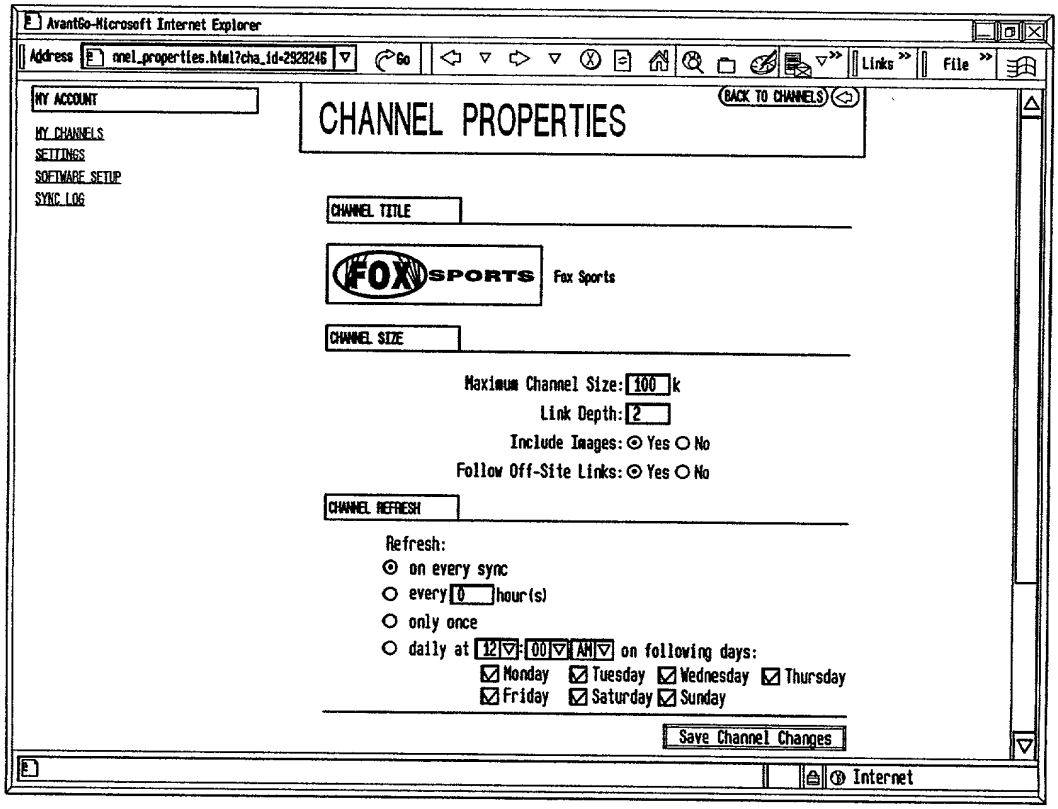

AvantGo-Microsoft Internet Explorer
Address
Links
File
MY ACCOUNT
MY CHANNELS
SETTINGS
SOFTWARE SETUP
SYNC LOG
CHANNEL PROPERTIES
BACK TO CHANNELS
CHANNEL TITLE
FOX SPORTS
Fox Sports
CHANNEL SIZE
Maximum Channel Size: 100 k
Link Depth: 2
Include Images: Yes No
Follow Off-Site Links: Yes No
CHANNEL REFRESH
Refresh:
on every sync
every 0 hour(s)
only once
daily at 12 00 AM on following days:
Monday Tuesday Wednesday Thursday
Friday Saturday Sunday
Save Channel Changes
Internet

FIG. 44

AvantGo™

WELCOME, dkoehn68
Log out

MY ACCOUNT

MY CHANNELS
SETTINGS
SOFTWARE SETUP
SYNC LOG

AUTOCHANNEL™

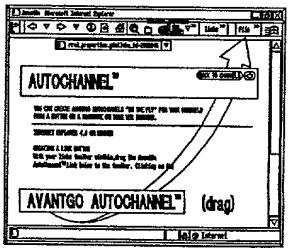
BACK TO CHANNELS

YOU CAN CREATE AVANTGO AUTOCHANNELS "ON THE FLY" FOR YOUR HANDHELD FROM A BUTTON OR A BOOKMARK ON YOUR WEB BROWSER.

INTERNET EXPLORER 4.0 OR HIGHER

CREATING A LINK BUTTON
With your links toolbar visible, drag the AvantGo AutoChannel™ link below to the toolbar. Clicking on the button while browsing a website will let you add that website to your handheld device.

Drag this link: AvantGo AutoChannel



CREATING A BOOKMARK
Right-click on AvantGo AutoChannel™ link below and select "Add to Favorites...". Choosing this in your favorites will let you add the website you are browsing as an AvantGo channel on your handheld.

Right-click this link: AvantGo AutoChannel

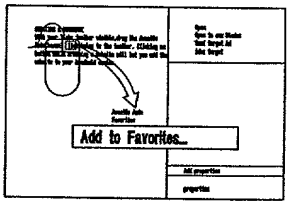


FIG. 45

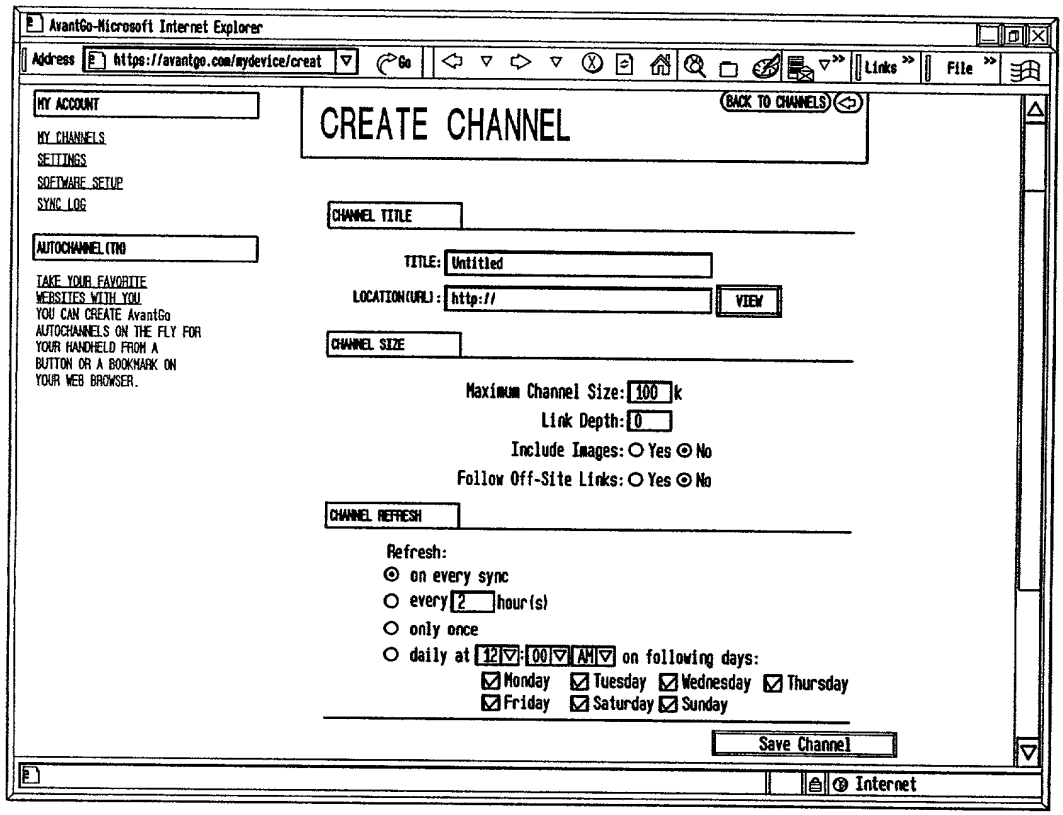

AvantGo-Microsoft Internet Explorer
Address https://avantgo.com/mydevice/creat
Go
Links
File
MY ACCOUNT
MY CHANNELS
SETTINGS
SOFTWARE SETUP
SYNC LOG
AUTOCHANNEL(TM)
TAKE YOUR FAVORITE WEBSITES WITH YOU
YOU CAN CREATE AvantGo AUTOCHANNELS ON THE FLY FOR YOUR HANDHELD FROM A BUTTON OR A BOOKMARK ON YOUR WEB BROWSER.
CREATE CHANNEL
BACK TO CHANNELS
CHANNEL TITLE
TITLE: Untitled
LOCATION(URL): http://
VIEW
CHANNEL SIZE
Maximum Channel Size: 100 k
Link Depth: 0
Include Images: Yes No
Follow Off-Site Links: Yes No
CHANNEL REFRESH
Refresh:
on every sync
every 2 hour(s)
only once
daily at 12 : 00 AM on following days:
Monday Tuesday Wednesday Thursday
Friday Saturday Sunday
Save Channel
Internet

FIG. 46

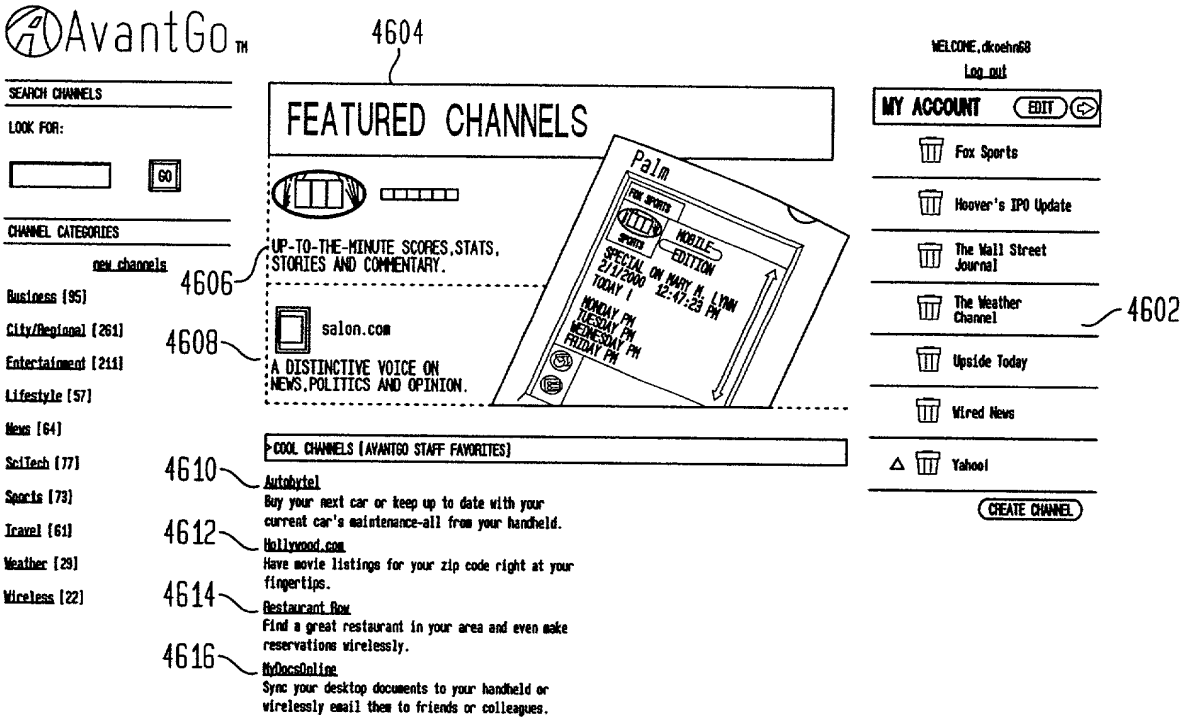

AvantGo TM
4604
SEARCH CHANNELS
LOOK FOR:
GO
CHANNEL CATEGORIES
new channels
Business [95]
City/Regional [261]
Entertainment [211]
Lifestyle [57]
News [64]
SciTech [77]
Sports [73]
Travel [61]
Weather [29]
Wireless [22]
FEATURED CHANNELS
4606
UP-TO-THE-MINUTE SCORES,STATS, STORIES AND COMMENTARY.
4608
salon.com
A DISTINCTIVE VOICE ON NEWS,POLITICS AND OPINION.
COOL CHANNELS [AVANTGO STAFF FAVORITES]
4610
Autobytel
Buy your next car or keep up to date with your current car's maintenance-all from your handheld.
4612
Hollywood.com
Have movie listings for your zip code right at your fingertips.
4614
Restaurant Row
Find a great restaurant in your area and even make reservations wirelessly.
4616
MyDocsOnline
Sync your desktop documents to your handheld or wirelessly email them to friends or colleagues.
WELCOME,dkoehn68
Log out
MY ACCOUNT
EDIT
Fox Sports
Hoover's IPO Update
The Wall Street Journal
The Weather Channel
4602
Upside Today
Wired News
Yahoo!
CREATE CHANNEL

FIG. 47

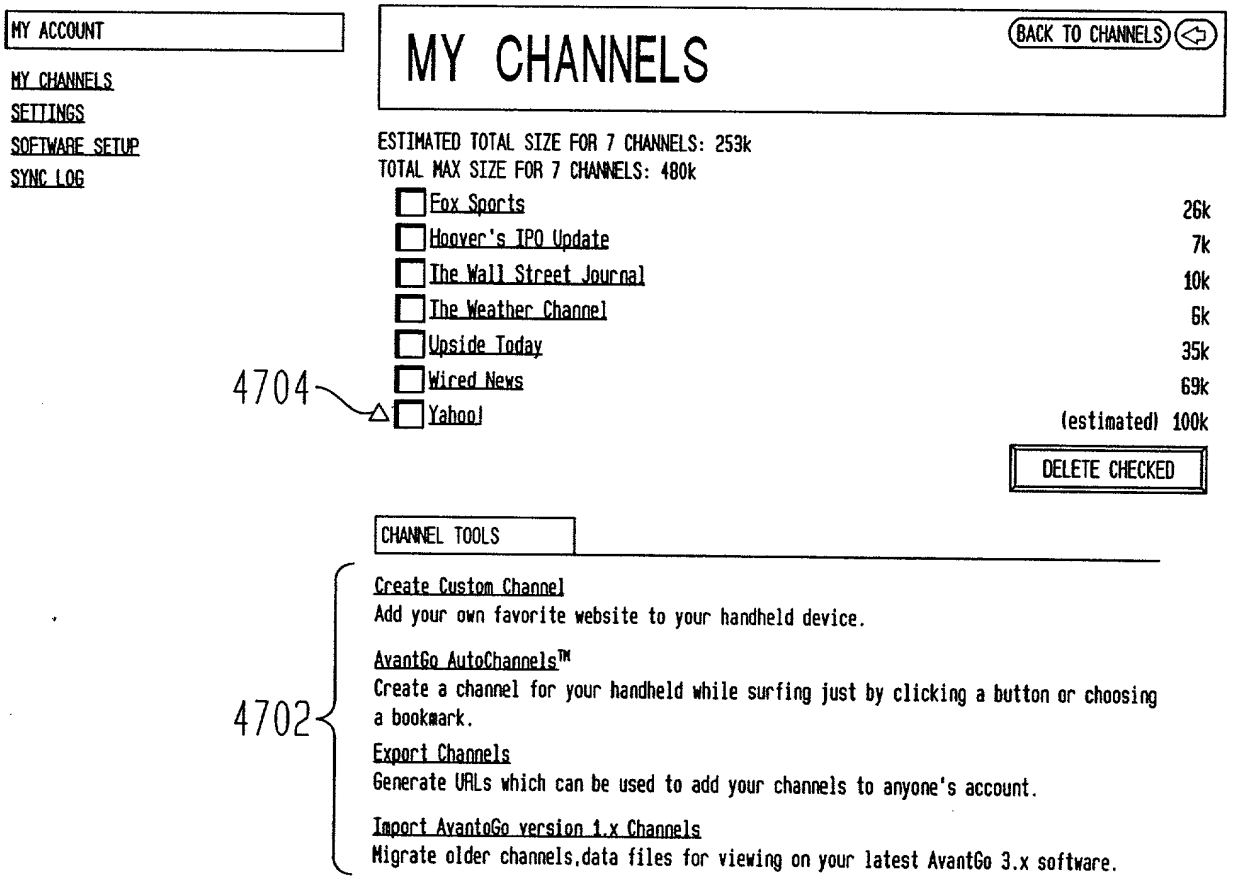

MY ACCOUNT
MY CHANNELS
SETTINGS
SOFTWARE SETUP
SYNC LOG
MY CHANNELS
BACK TO CHANNELS
ESTIMATED TOTAL SIZE FOR 7 CHANNELS: 253k
TOTAL MAX SIZE FOR 7 CHANNELS: 480k
Fox Sports 26k
Hoover's IPO Update 7k
The Wall Street Journal 10k
The Weather Channel 6k
Upside Today 35k
Wired News 69k
4704
Yahoo! (estimated) 100k
DELETE CHECKED
CHANNEL TOOLS
4702
Create Custom Channel
Add your own favorite website to your handheld device.
AvantGo AutoChannels™
Create a channel for your handheld while surfing just by clicking a button or choosing a bookmark.
Export Channels
Generate URLs which can be used to add your channels to anyone's account.
Import AvantGo version 1.x Channels
Migrate older channels,data files for viewing on your latest AvantGo 3.x software.

FIG. 48

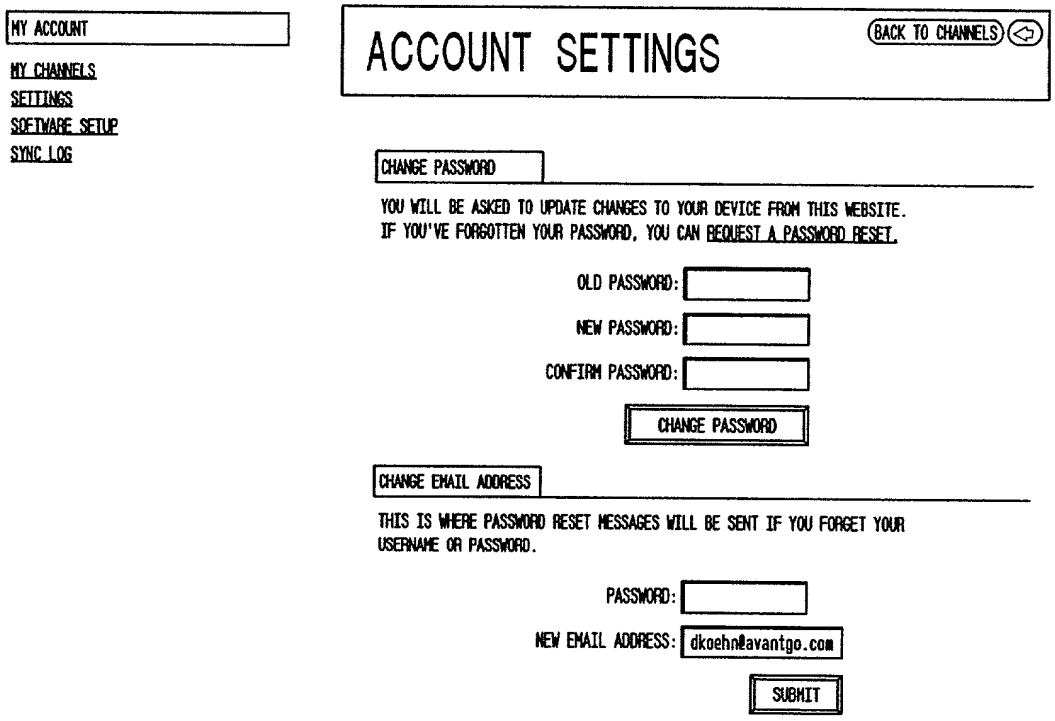

MY ACCOUNT
MY CHANNELS
SETTINGS
SOFTWARE SETUP
SYNC LOG
ACCOUNT SETTINGS
BACK TO CHANNELS
CHANGE PASSWORD
YOU WILL BE ASKED TO UPDATE CHANGES TO YOUR DEVICE FROM THIS WEBSITE.
IF YOU'VE FORGOTTEN YOUR PASSWORD, YOU CAN REQUEST A PASSWORD RESET.
OLD PASSWORD:
NEW PASSWORD:
CONFIRM PASSWORD:
CHANGE PASSWORD
CHANGE EMAIL ADDRESS
THIS IS WHERE PASSWORD RESET MESSAGES WILL BE SENT IF YOU FORGET YOUR USERNAME OR PASSWORD.
PASSWORD:
NEW EMAIL ADDRESS:
dkoehn@avantgo.com
SUBMIT

FIG. 49

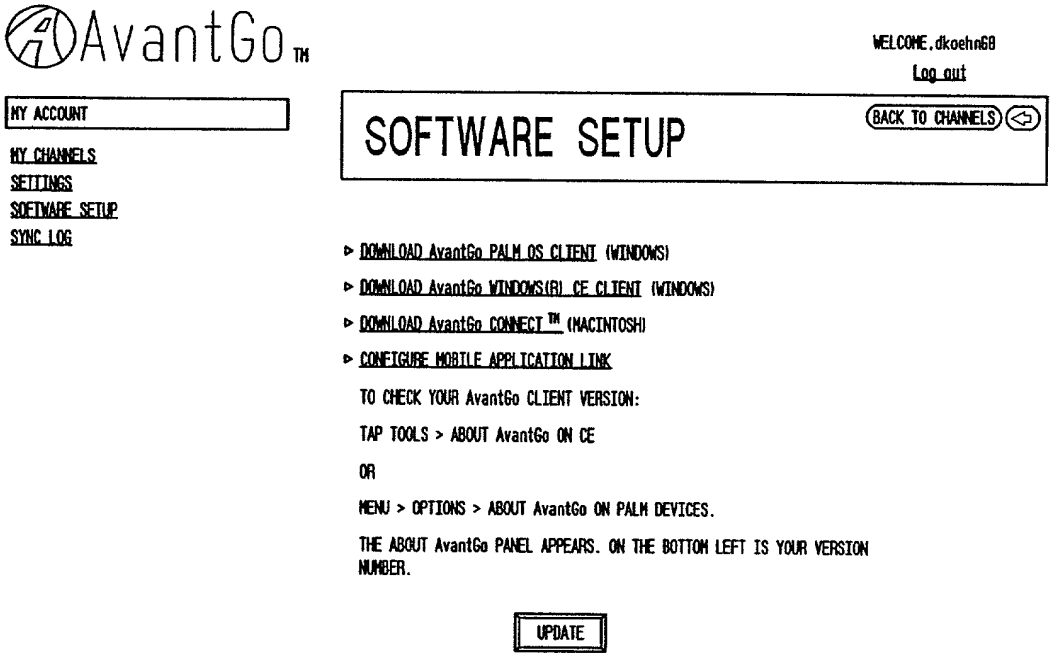

AvantGo TM
WELCOME,dkoehn68
Log out
MY ACCOUNT
MY CHANNELS
SETTINGS
SOFTWARE SETUP
SYNC LOG
SOFTWARE SETUP
BACK TO CHANNELS
DOWNLOAD AvantGo PALM OS CLIENT (WINDOWS)
DOWNLOAD AvantGo WINDOWS(R) CE CLIENT (WINDOWS)
DOWNLOAD AvantGo CONNECT TM (MACINTOSH)
CONFIGURE MOBILE APPLICATION LINK
TO CHECK YOUR AvantGo CLIENT VERSION:
TAP TOOLS > ABOUT AvantGo ON CE
OR
MENU > OPTIONS > ABOUT AvantGo ON PALM DEVICES.
THE ABOUT AvantGo PANEL APPEARS. ON THE BOTTOM LEFT IS YOUR VERSION NUMBER.
UPDATE

FIG. 50

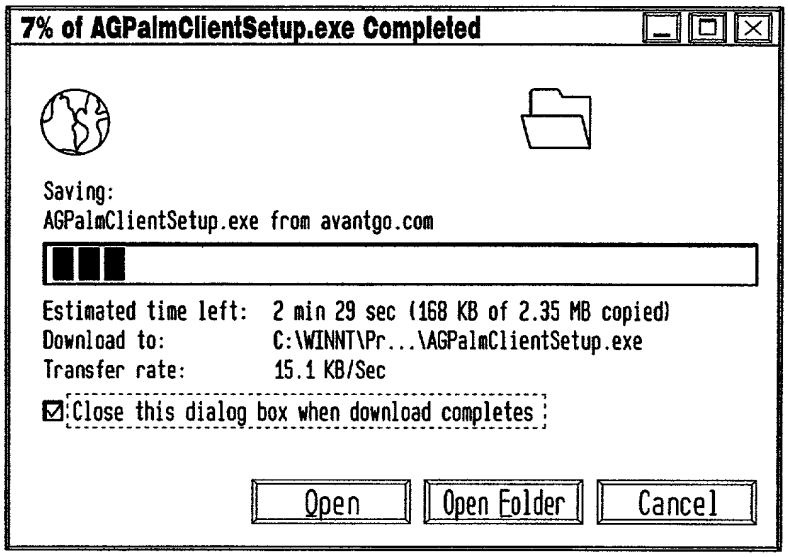

7% of AGPalmClientSetup.exe Completed
Saving:
AGPalmClientSetup.exe from avantgo.com
Estimated time left: 2 min 29 sec (168 KB of 2.35 MB copied)
Download to: C:\WINNT\Pr...\AGPalmClientSetup.exe
Transfer rate: 15.1 KB/Sec
Close this dialog box when download completes
Open
Open Folder
Cancel

FIG. 51

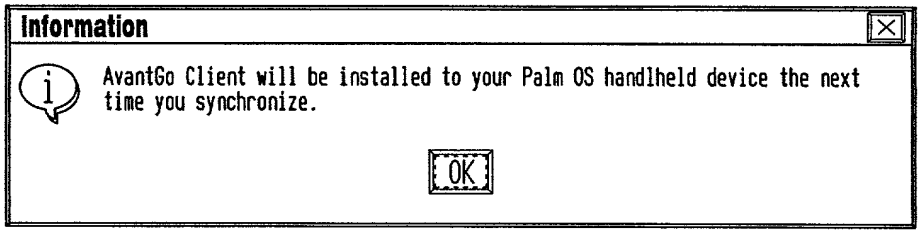

Information
AvantGo Client will be installed to your Palm OS handheld device the next time you synchronize.
OK

FIG. 52

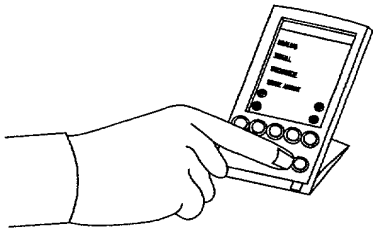
AvantGo™

SETUP CHECKLIST
✓DOWNLOAD
▸INSTALL
SYNCHRONIZE
CREATE ACCOUNT
CONFIGURE
SYNCHRONIZE

SYNCHRONIZE

Place your device in its cradle and press the HotSync button.

When you synchronize, AvantGo 3.x will be installed on your device. After synchronization is complete, click the "Next" button at the bottom of the page.



NEXT >>

FIG. 53

AvantGo™

SETUP CHECKLIST
✓DOWNLOAD
✓INSTALL
✓SYNCHRONIZE
▸CREATE ACCOUNT
CONFIGURE
SYNCHRONIZE

USE EXISTING ACCOUNT?

Select below to use this account or to create a new one

Username: dkoehn68
Email: dkoehn@avantgo.com

◉ Use this account
○ Create a new account

NEXT >>

FIG. 54

AvantGo™

SETUP CHECKLIST
✓DOWNLOAD
✓INSTALL
✓SYNCHRONIZE
✓CREATE ACCOUNT
▸CONFIGURE
SYNCHRONIZE

CONFIGURE MOBILE LINK

Click the link below to configure Mobile Link™

By clicking below, you will ensure your AvantGo 3.x software is communicating properly with AvantGo's servers.

CLICK HERE TO CONFIGURE 5402

NEXT >>

FIG. 55

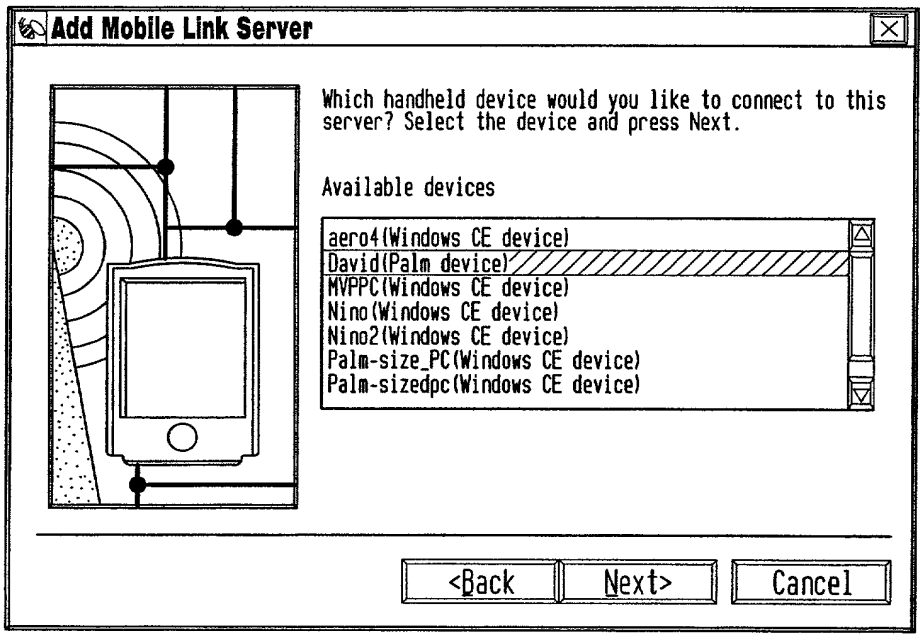

Add Mobile Link Server
Which handheld device would you like to connect to this server? Select the device and press Next.
Available devices
aero4(Windows CE device)
David(Palm device)
MVPPC(Windows CE device)
Nino(Windows CE device)
Nino2(Windows CE device)
Palm-size_PC(Windows CE device)
Palm-sizedpc(Windows CE device)
<Back
Next>
Cancel

FIG. 56

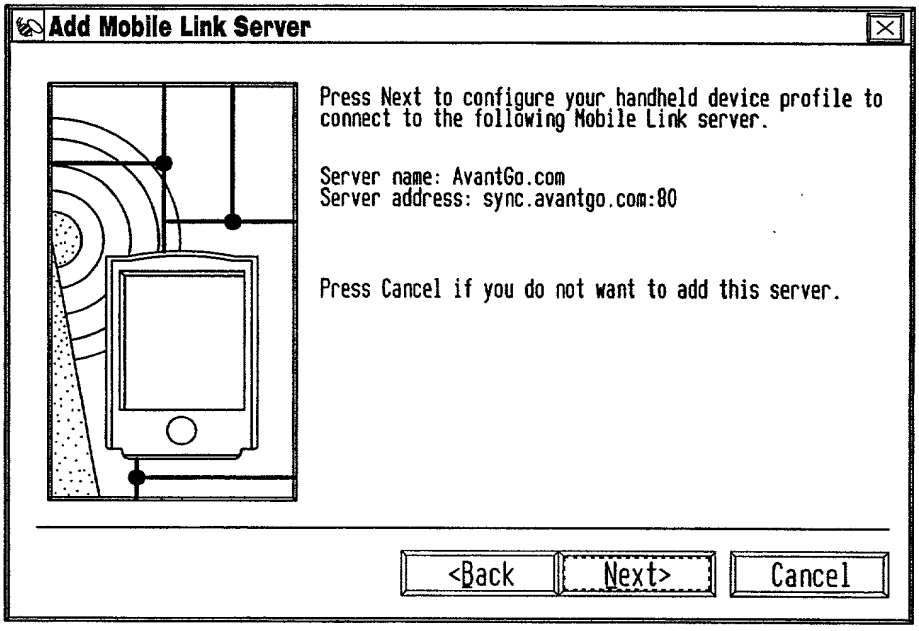

Add Mobile Link Server
Press Next to configure your handheld device profile to connect to the following Mobile Link server.
Server name: AvantGo.com
Server address: sync.avantgo.com:80
Press Cancel if you do not want to add this server.
<Back
Next>
Cancel

FIG. 57

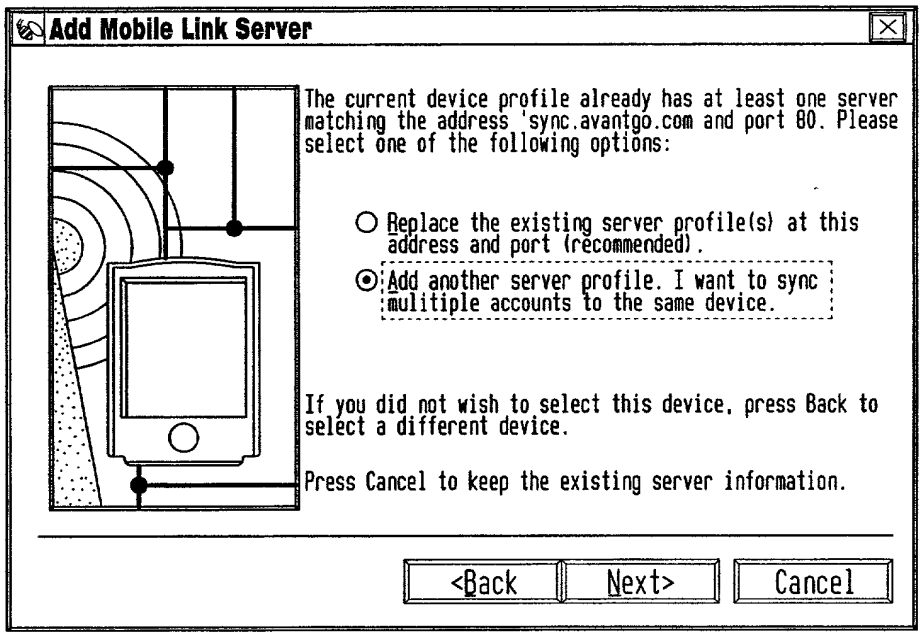

Add Mobile Link Server
The current device profile already has at least one server matching the address 'sync.avantgo.com and port 80. Please select one of the following options:
Replace the existing server profile(s) at this address and port (recommended).
Add another server profile. I want to sync mulitiple accounts to the same device.
If you did not wish to select this device, press Back to select a different device.
Press Cancel to keep the existing server information.
<Back
Next>
Cancel

FIG. 58

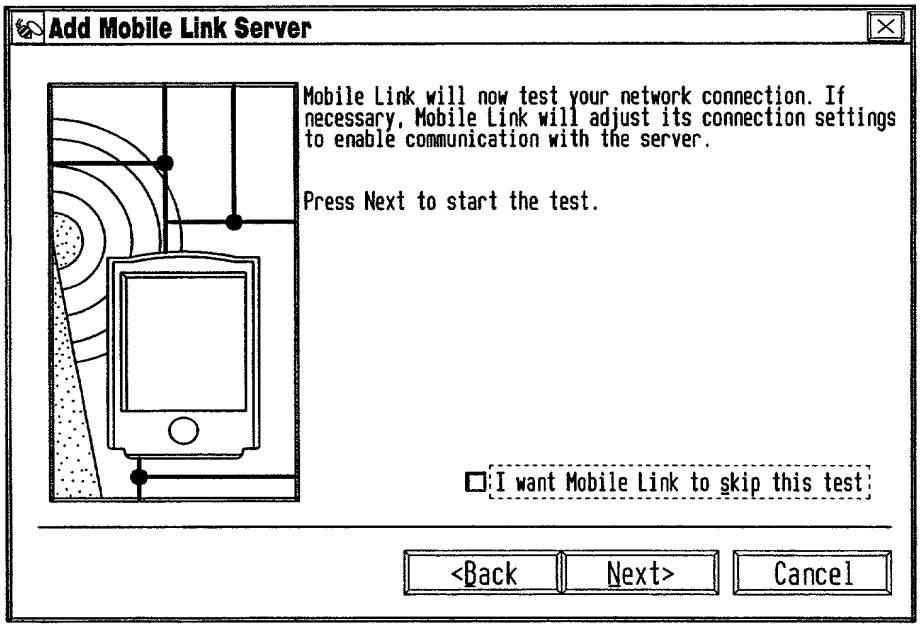

Add Mobile Link Server
Mobile Link will now test your network connection. If necessary, Mobile Link will adjust its connection settings to enable communication with the server.
Press Next to start the test.
I want Mobile Link to skip this test
<Back
Next>
Cancel

FIG. 59

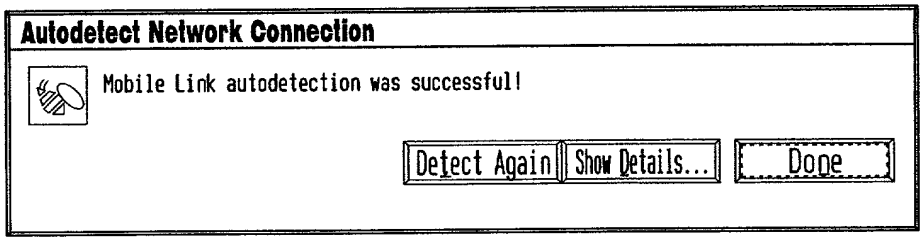

Autodetect Network Connection
Mobile Link autodetection was successful!
Detect Again
Show Details...
Done

FIG. 60

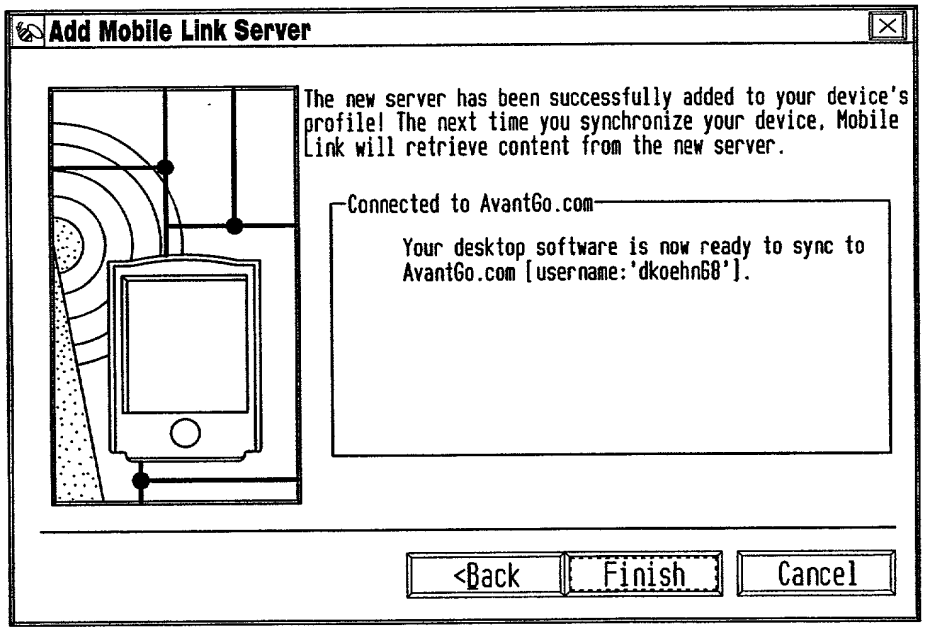

Add Mobile Link Server
The new server has been successfully added to your device's profile! The next time you synchronize your device, Mobile Link will retrieve content from the new server.
Connected to AvantGo.com
Your desktop software is now ready to sync to AvantGo.com [username:'dkoehn68'].
<Back
Finish
Cancel

FIG. 61

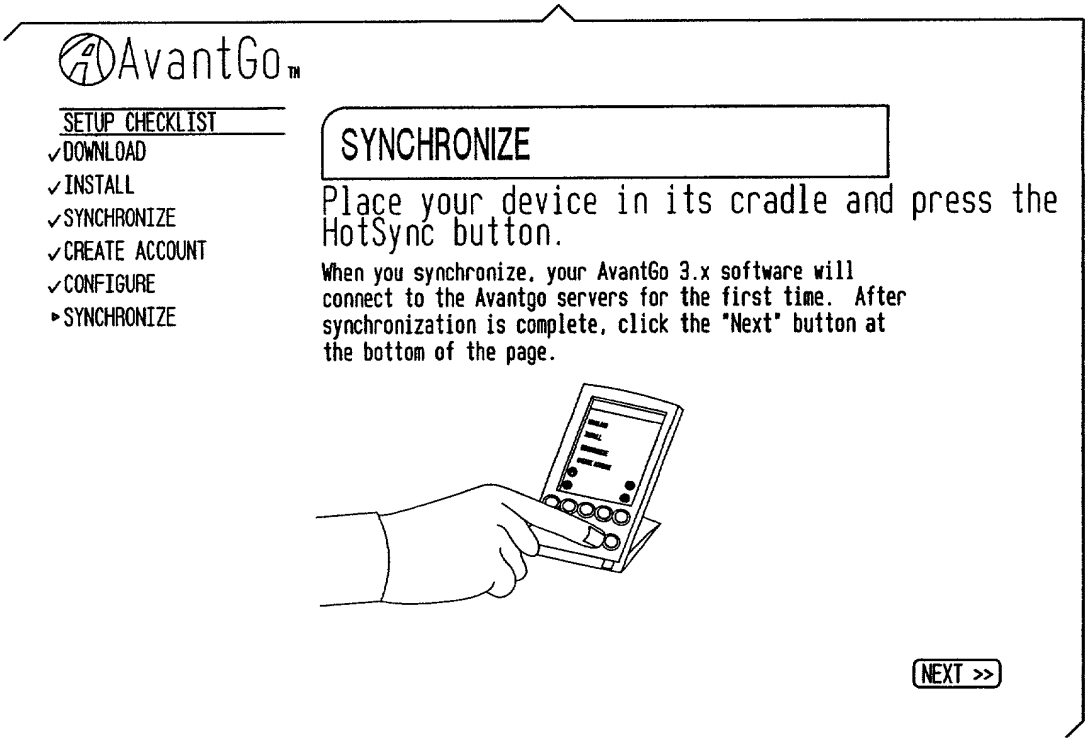
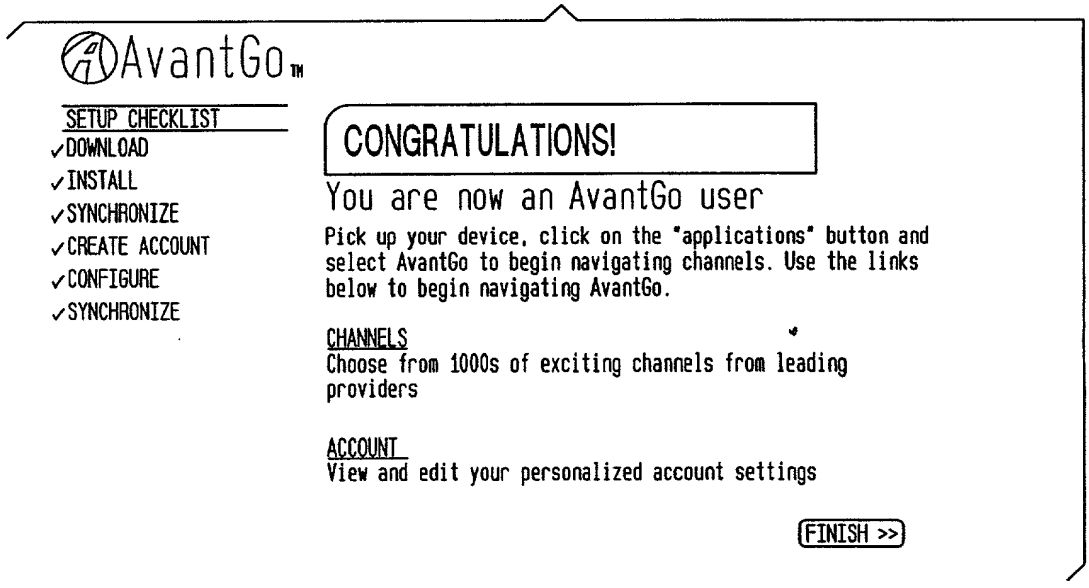


FIG. 62



Page 72 of 73

FIG. 63A

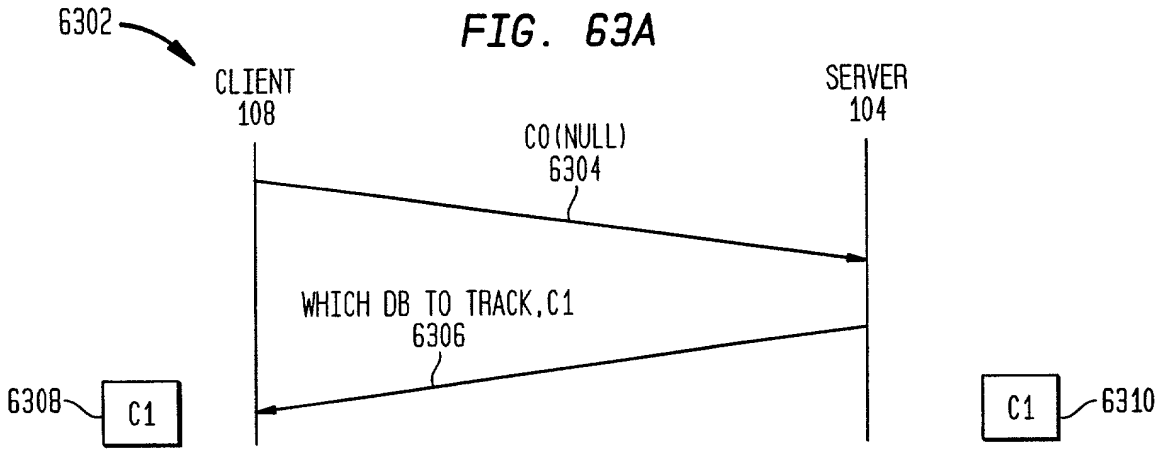
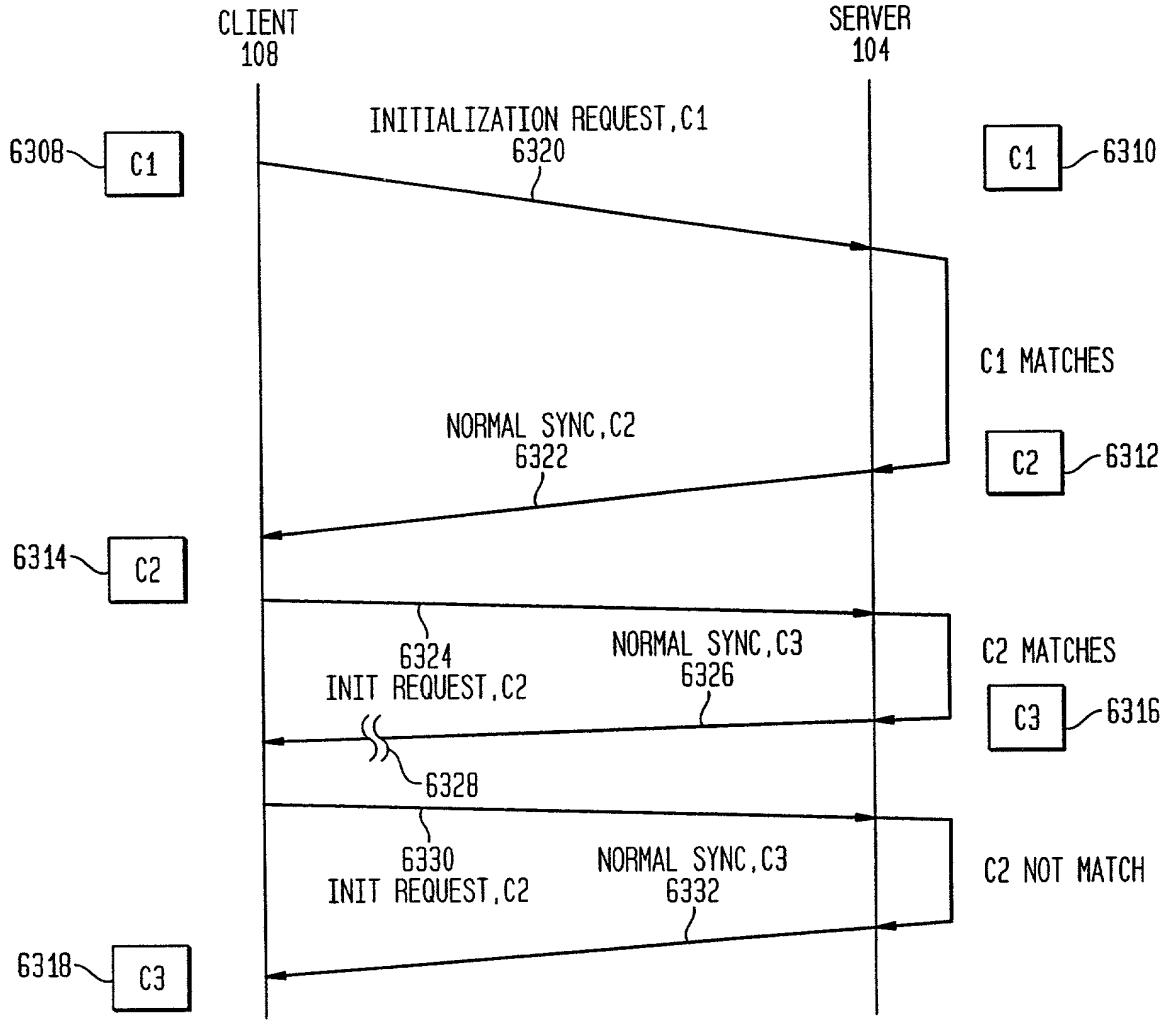



FIG. 63B